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ORIGINAL ARTICLES.

SOME REMARKS ON MALIGNANT GROWTHS.

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The expression "malignancy" is now reserved for such pathologic new formations that will often return after removal and form metastases, if not entirely removed. As the first depends upon incomplete removal, mostly depending on dissemination of tumor-germs in the various forms of the primary growth, the latter property only is the true feature of malignant tumors.

To clear up the nature of this property is a task of the highest scientific and practical importance, and it seems always convenient to review our notions on these points, even though they are not wholly conclusive. At least, such an examination of facts will show the way for further investigation and secure the practitioner and pathologic investigator from mistakes, by removing misunderstandings.

Separating the infectious tumors from the organoid growths, in the second part of my "General Pathology" (1889) I think I have placed the question somewhat clearer. The organoid tumors spread by dissemination of tumor-cells; the infectious tumors by dissemination of microbes.

Now, in this decennium, attempts were renewed to subject the organoid growths also to the action of microbes. Sudakewicz, Ruffer and others regarded the long-known hyaloid masses, intracellular and extracellular, found in carcinomas, to be plasmodia or coccidia, and the various forms of those things, namely, the concentric or radial striping of globular masses, induced observers of high standing, as Metschnikoff, to accept this suggestion. I have shown ("General Pathology," ii, p. 126, fig. 11, and p. 152, table 17) the formation of such bodies in blood vessels of the brain, in chorea hereditaria, in the lymphatics of the lungs, in chronic bronchial croup, and in an acute atrophic liver, processes in which the inoculation of blood and lymph seems to be impaired.

Further, if there were microbes in malignant tumors they must grow and develop under well adapted conditions of life. As all attempts of cultivation outside of the body had failed, I implanted living carcinomatous tissue from man into the livers of a number of rats, that showed very often spontaneous development of carcinoma and seemed therefore to be highly predisposed to this disease. These particles contained human epithelial cells and the hyalin bodies. The cells showed in these experiments the first signs of farther development in the formation of microbes, but were involved later; the latter disappeared in a short time without a tendency of development.

I can not accept the objection of Metschnikoff that coccidia of one animal would not grow in another, for these suggested coccidia were included in living and to a certain degree developing human cells. That they would not develop under these conditions shows quite clearly that they are not living bodies at all.

After the coccidium theory had slumbered for years, came the blastomycete- or yeast-theory of the Italians. The extracellular disposition of these bodies shows clearly that they can not be the cause of tumor-propagation by cell-dissemination. As one of the observers contended that these bodies were only found in certain parts of the tumors, I encouraged a good microscopist working in my laboratory, Dr. Döpfner, of Chicago, to undertake the difficult task of staining hundreds of microscopic preparations of a recurring and spreading lymphosarcoma, operated by Dr. C. Beck, in the Post-Graduate Medical School. It seemed more probable that we should have positive results in that case, as I had cultivated some yeast or blastomycetes from this tumor, coming into my hands immediately after the operation. The bodies, on fluid meat-peptone, found in cultures were somewhat smaller than human red blood corpuscles, round, quite circular, with a distinct membrane, forming internal spores and also external buds. (Knospung.)

From all these circumstances I do not think that it was a fortuitous incident, but that these growths came from out the tumor. Indeed, there were found by Dr. Döpfner in some of the preparations round bodies stained deep black with aqueous anilin gentian violet, and discolored with oxalic acid, 1 per cent. But they were smaller than the yeast corpuscles, some very small, and showed no signs of vegetation, either as buds or internal spores. Moreover, they seemed to be in connection with red blood corpuscles, which retain also other anilin dyes, namely, after using corrosive substances, mordants, as after the use of iron-ammonia-sulphate (Heidenhain).

The last prove what I have proposed long before R. Koch, in such cases to ascertain the etiologic connection of an organism with a certain disease; the synthesis of the same disease by the organism I have not yet shown, but it will be made later, notwithstanding that it may fail by not having suitable animals, positive results alone being conclusive.

The lympho-sarcoma having a place on the limits of infectious and organoid tumors, the result of such experiments would not invalidate our notions of true organoid tumors, which disseminate alone by tumor cells; a form of generalization that is not infection, but must be called decidedly *implantation*.

It is one of the best confirmed pathologic facts that every true carcinoma spreads by the transportation of its own cells through lymphatic spaces and blood vessels. The same is demonstrated in a very great number of malignant tumors; also of such originating from the tissues of the middle germinal plate,

the endothelioma, the enchondroma and the sarcoma. It is also true for malignant neuroma.

The demonstration of this fundamental fact naturally is the more sure, as the specific histologic feature of the disseminated cells are more evident, as is the case in epithelial, cartilaginous, nervous or mucous cells. But it is also assured by the identical composition of the youngest metastases exactly showing the same histologic structures as the primary tumor.

Further we can say, that every carcinoma commences with the formation of metastasis spreading; or expressed in another way, the true nature of carcinomatous condition is the dissemination of certain epithelial cells. If we have the opportunity to examine the first stage of carcinomatous development, we can perceive this fact and will be inclined to assert such a diagnosis if we can demonstrate this epithelial displacement.

In this fact reposes the theory of R. Virchow, declaring the carcinoma as an heterotopic development of epithelial cells. Cohnheim, *vice versa*, thought that epithelial tissue displaced in embryonic tissue may be the origin of cancer, while Ribbert, during the last year proposed the opinion that every cancer commences with epithelial developments near the normal epithelial covering, but originating from embryonic epithelial germs.

The theory of Virchow is no more acceptable, since we know the sharp division between the descendants of the different germinal plates, and the theory of Ribbert reposes on the hypothesis of germinal displacement of single cells, not demonstrated, probably not demonstrable. The broadest pathologic view showed Cohnheim's theory of the highest value for the understanding of tumor formation, but not for malignancy.

If we remember the large number of embryonic implantations, we must positively deny that they show a disposition for malignancy. All dermoids or natural graftings of skin particles in the depth of the organs can grow, and many of them, as the dermoid of the ovaries, will become very dangerous in later life, but only by mechanical influences producing irritation of the peritoneum or perforations into the intestine or the urinary bladder, seldom also of the abdominal wall. But I do not remember one case of carcinomatous degeneration.

The same benign or only locally dangerous course show the fetal implantations, the dermoids containing whole organs, as I have shown, dispersed parts of a second fetus included in the abdominal cavity of his brother. Here the destruction of the included fetus can be so great that the different tissues seem to have lost all their natural connection, lying pell-mell, and notwithstanding we observe here not the active penetration of connective tissue by epithelial cells, as in the cancer. Where two tissues develop together the relation between them is always the normal in these cases.

But there exists a second kind of tumor, apparently resulting from embryonic influences demonstrable nearly in all organs. In these certain parts of the tissues, composing otherwise normal organs, conserve their embryonic conditions. To this class belong most of the congenital multiple tumors, the multiple neuromas and neurofibromas, the multiple enchondromas and the multiple adenomas.

I will refer here only to the last, as they seem by their epithelial origin to be mostly adapted for cancerous growths. These adenomas are preferably developed in the ovaries, the liver, the kidneys and the mammary glands.

In the ovary they are found under the two forms of so-called compound cystoids and of papillomatous tumors.

The first, the mucus-producing form, is developed, as I have shown a long time ago, from the embryonic tubular structure of the ovarian glands (Valentin, Pflüger), not transformed to Graafian follicles.

Already Spencer Wells remarked that after extirpation of a cystic ovary the other oftentimes developed in the same manner. I could sometimes demonstrate the stages of this affection in the seemingly normal organ of the other side.

The exceedingly frequent recurrence of the adenoma of the breast after extirpation of the greater knots is well known; also the fact that these recurrences, starting from embryonic remains and finding place for development after removal of the first, are not at all dangerous or give a disposition to cancer. I saw such a breast operated upon more than twenty times and containing many more adenomas of microscopic volume.

The adenomas of the liver are often so numerous, forming small gray nodules, that they may resemble miliary tubercules. But some of them can develop to very large tumors without causing metastases.

In the kidney, where these tumors form also multiple gray spots, composed of proliferating uriniferous tubes (not to be confounded with the disseminated germs of the adrenals), I have seen as the first case that came in my hand here an enormous tumor of this sort, operated by Dr. Ferguson, Sept. 30, 1896. The patient was a young lady from Canada, operated upon some years before for a cyst, opened through the abdominal wall, the origin of which could not be located. The kidney at this time was probably not enlarged and only one of the multiple adenomas was developed to a large cyst. Now, the whole kidney formed a tumor of two feet in length and one in breadth, reaching down into the pelvis and upward into the thoracic cavity, raising the diaphragm and displacing the heart and left lung.

The enormous tumor, enucleated with great skill and with happy result, proved to consist only of the kidney; the normal kidney-substance formed a small strip at the one pole. The other pole contained a large cyst surrounded by soft gray adenomatous tissue. The median part was composed of grayish-looking, round adenomatous nodules, varying from the size of a chestnut to that of a man's fist, separated by very small tracts of atrophied kidney tissue. The cyst was formed more by necrosis and absorption of the necrotic tumor masses, than by distension of tubules.

As the recovery of the patient was effected in a short time and she gained very much (24 lbs., Jan. 30, 1897), it is not to be considered a carcinomatous development, which is also not at all sustained by microscopic investigation, showing only proliferating tubes.

In other tumors of this class we can observe the highest possible proliferation and dissemination of epithelial tissues without formation of metastases or dangerous development. So, in one case of double-sided papillomatous tumors of the ovaries, combined with a great urachus-cyst, operated by Dr. Franklin H. Martin in the Post-graduate Medical School, there protruded enormous papillomatous masses, covered with thick layers of proliferating epithelial cells, freely in the abdominal cavity without giving rise to secon-

dary development. These masses and also the same formations filling up the distended Graafian follicles exhibited a very interesting production of ovum cells, described first by Ernst Neumann in Königsberg, a true adeno-papilloma oviparum.

All these excessive productions of epithelial cells, limited to physiologic condition in the behavior and relation of tissues are quite different from carcinomatous epithelial productions.

Further, we must say: dissemination of normal epithelium produces no carcinoma. Such disseminations occur in the female body at every menstruation. All attempts made by different observers to produce carcinoma by implantation in lymphatic spaces have totally failed.

The hitherto reported observations lead to the conclusions: 1, that the embryonic condition of any part of the body can be regarded only as one of the causes of tumor formation, but not of the malignancy of tumors; 2, that the malignancy of tumors, the faculty of spreading by its elements, is due to a modification of the tumor cells.

The next question will be to disclose the nature of carcinoma cells and, if possible, the origin of this modification of cell life.

As to the first question, it suffices to indicate the two well known properties of these malignant cells, as we can now say, the faculty to grow and proliferate in a strange tissue and the deficiency of tissue formation. The epithelial cancer cell produces in any organ into which it is transported by their own movements Waldeyer's contractile epithelial pus-cells, or by the currents of lymph or blood, irregular cell masses, resembling somewhat the original tissues, flat or cylindric cells, but very different from the original masses. The relation of the cancer cells to the surrounding stroma is deeply altered; blood vessels and connective tissue grow, as it seems, stimulated by the cancer cells in the same excessive and irregular way as in the primary tumor.

We can express this simple fact without any hypothetic suggestion as the disturbance of the laws of tissue formation or of normal growth.

As to the second question, the causes of this lawless cancerous growth, we must refuse to accept the embryonic theory and, so far as our knowledge now reaches, also the microbic theory. If new investigations should detect an organism promoting this cancerous metamorphosis, and also present in all the other malignant tumors, as endotheliomas, neuromas, myomas, etc., certainly a very intimate symbiosis must be established between such organism and the cancerous cell, the medium of metastasis. Intracellular microbes would only cover this claim.

As every effort to demonstrate such a microbe has failed, we must ask if the clinical features of malignancy suggest such a theory. But as the observations of direct or indirect infection and the formation of endemic or epidemic development of cancer (not regarding the more seldom developing forms of other metastatic growths), are not present or available in any extent, I will not delay this exposition of facts by criticising the opposite assertions, familiar and local differences in the frequency of cancer.

But I must insist on one fact not enough regarded, as it seems to me, that in a higher way as the clinical facts invalidate the idea of infection, that is, the originating of true cancer in other benign or infectious tumors.

With very few restrictions we can point out as a general law, that the origin of cancer is always a secondary metamorphosis of proliferating tissues.

That this is the case in a considerable number of cancerous growths nobody will deny; I remember the development of cancer in lupous or tubercular ulcerations of the skin, in the chronic ulcer of the leg and the round ulcer of the stomach, also in the chronic hyperplastic affections of mucous membranes. The cervix uteri gives many good examples, by the way, oftentimes affording diagnostic difficulties. Before the ulceration they seldom can be detected to be of a cancerous nature. Therefore the microscopic diagnosis of all the hypertrophic adenomatous, papillomatous and polypous forms of vegetations of the neck of the uterus is of the highest value for the question of radical operation. Once, in the practice of Breisky in Prague, I found a very well developed cancer in a pedicled small polypus of this part.

The highest support for the successive development of malignancy is given by cases in which foreign bodies promote first the development of simple benign tumors, which later on are changed to cancerous growths. The calculi in the gall bladder and foreign bodies (once a cherry stone) in the stomach, I have observed as the causes of papillomatous, later cancerous growths.

Another instructive object is found by the papillomatus growth of the urinary bladder, developing oftentimes in younger years and leading by repeated bleedings to the highest forms of anemia. I have observed a number of these cases for years, the healing after natural expulsion of these tumors and otherwise the carcinomatous metamorphosis, if these long standing tumors are not eliminated in the natural way or by surgical help. In one of my friends in Switzerland I have followed this development for years, in vain insisting on operation.

Now, I have here received from Dr. Kovats in Milwaukee, Wis., such an object, operated as I hope at the right time, but showing as I think a partially malignant metamorphosis.

In former times it seemed sufficient to give a bad prognosis, if in the urine of such cases were detected many large and irregular epithelial cells, and indeed, many of these patients died cancerous, as the operation was not undertaken. Others, in which natural elimination occurred, recovered. Hence, the conclusion is secured that the once benign tumor becomes malignant after a time.

I can show you microscopically in this tumor one part in which, at some places the intrusion of the covering and highly vegetating epithelial cells into the stroma has commenced, and in which epithelial cells at one place forming a rounded heap, are present in a wide lymphatic space, included by a fine fibrinous network. Without imbedding in paraffin it would be not possible to obtain from such tumors complete and sufficient thin slices (1-100 millimeter).

In this case the basis of the tumors containing broad arteries was found to be quite free from such development. So I could notwithstanding express a somewhat hopeful prognosis. The future will reveal if this view is correct or not. The radical cure of cancer by total extirpation is no more questionable.

But in such cases there will remain oftentimes a doubt. We must ask if really this penetration of proliferating epithelial cells will always be sufficient for the diagnosis of cancer. If we find irregular growing

epithelial masses in great extension in an also granulating stroma, there can not be justified a doubt. But if this process is going on to a very small extent, this doubt must arise the more, as one is convinced of the harmlessness of normal epithelial cells introduced by only mechanic forces into the lymphatic spaces. I have reminded you of a number of such facts.

Therefore, we must search to point out the true features of cancerous proliferation. If the epithelium cells are the seat of this metamorphosis, the proliferating cells only can give us the explanation for this biologic change. The irregularities in mature age depend upon modified development.

The principal feature of carcinomatous cell proliferations can be denoted as *hypermitosis*, depending upon supernutrition of the cells. In the place of the normal well-known forms of karyokinesis we observe in every carcinoma or other malignant growth irregular and exaggerated forms of mitosis. I have marked out a part of these processes in my "General Pathology"; also Hansemann of Berlin has given valuable observations of the same, but regards more the phases of division as the preparatory stages of the process. Here, let me give a more complete exhibition of the process.

As I have remarked in my first publication, the epithelial cells tending to karyokinesis take up a greater quantity of coloring matter in the protoplasma and in the nuclei; both enlarge, the first staining more intensely with acid anilin dyes, as eosin or methyl orange, the nuclei with hematoxylin. In intensely proliferating objects, in which these very transient processes are fixed by rapidly killing the cell life,[1] one notices after staining the fine sections (1–100 mm. thick) with hematoxylin[2] and eosin, that in different parts of the preparation black (methyl orange) or deep blue (eosin) stained nuclear masses are present in abundant quantity, centers of proliferation (Flemming). In the same parts are recognized the different stages of karyokinesis and lastly a greater accumulation of leucocytes with fragmented nuclei. The last are irregularly disposed; some cells are crowded with them, others are free or we find only some leucocytes between the cells.

This seems to be the commencement of the process; the cells with richly staining nuclei contain a somewhat smaller number of fragmented nuclei, the bodies of them are dissolved and the stained leucocytic nuclear masses seem to be taken up by the nuclei of the epithelium cells. The leucocytes feed the epithelium cells. After this supernutrition the nuclei will be swelled up more and more by a colorless fluid, the membrane of the nucleus becomes thinner and thinner, whereas the stained nuclear substances commence to show the different stages of karyokinesis.

The forms of the spirema (Clew, Knänel) are not so clear as in normal mitotic division in consequence of the tight accumulation of the nuclein. In the first time of this stage it makes the impression as if these masses form an homogenous semiliquid fluid, the limits of it being not so clearly defined.

As a consequence, there begins the separation of the nuclein into different parts, mostly forming manifold compound middle plates, often in connection with one another, often separating in three or four or more plates. But generally not all of the nuclein is transformed at once in this manner; greater or smaller quantities of it are disseminated in loose masses, showing the form of fine threads dispersed through the free parts of the clear nucleinic area, that is no more sharply defined against the red-stained protoplasma.

If the middle plates are separated or only curved a little with the concavity against the periphery of the cell one may notice one or two very small entrosomes or central corpuscles exactly in the center of the circle, a section of which is formed by the middle plate; the whole constitutes one "attraction-sphere." The central corpuscles of the sphere are too small for showing a well-defined color, but they are best seen in preparation afterward stained with safranin. I suppose that these corpuscles are formed of the nucleolus not visible in this stage, but very large in all perfect nuclei of carcinomatous cells.

The formation of asters or stars, I have not observed in these hypermitoses. This stage must be very transient. But I have proofs that this metamorphosis and the formation of new nuclei is going on by repeated changes successively in one and the same cell, a feature quite characteristic of carcinomas. I can show you such cases in which the whole periphery of the highly enlarged cell contains well-formed nuclei, lying one near the other and containing a red-stained nucleolus, whereas in the central part the younger stages of karyokinesis are developed.

As a middle stage between these two phases, the curved middle plates and the perfectly developed nuclei, I have observed a few times large round vacuoles resembling the physalides described by Virchow, limited by a very fine membrane, and containing in a clear interior an indefinite mass stained red with safranin, possibly a nucleolus in formation; also a very few nucleinic threads. That in this case a deficiency of this latter substance resulted in a retarded or insufficient nucleus formation, I can not say with certainty, but it seems not improbable. If the attraction sphere acts by pulling of a part of the nuclein from the middle plate, it could be that this action has been insufficient in some instances. The spindle-shaped fiber of the attraction-spheres I have not been able to stain, but I am trying the methods of Flemming, which, as that observer remarks, are not always efficient. Possibly they will stain better in preparations fixed with osmic acid.

If we look over the whole process we see clearly the following phases of development of tumors, ending in the carcinomatous metamorphosis:

The first stage is that of chronic irritation or inflammation, originated by microbes or by mechanical, or probably also by chemical influences producing a chronic state of hyperplasia, the so-called benign growths composed of all normal tissues constituting the part. This development can lead to diffuse hyperplasia or tumor-formation.

The second stage commences with new emigration of leucocytes and progressive development of certain cells, losing through the hypermitotic production the faculty of normal tissue formation. The excessive proliferation and the possibility of living in a strange medium promotes the formation of metastasis, the true feature of carcinoma.

I will add the remark that this mode of develop-

[1] I use now for fixation a mixture of alcohol, about 4 parts, with formalin (40 per cent.) 1 part.

[2] My hematoxylin solution is prepared in the following manner: One gram cryst. hematoxylin is dissolved by warming in 20 c.c. kresol water 2 p.m. There is added for every c.c. of this solution one drop of a concentrated solution of ammonia alum in kresol water and filled up with kresol water to 100 c.c. The solution is ready for use in twenty-four hours, deposits very small quantities that must be taken off by filtration, and stains the thin sections in one or two minutes.

ment seems to exclude the healing of malignant tumors by irritations, the electrical, microbic or chemical treatment. The delimitations of emigration processes would be preferable to the necrotising effects of these treatments. But the surest way will be always the removal in time. Possibly we may prevent or modify the cancerous metamorphosis by inhibiting substances with negative chemiotaxis, repelling the leucocytes, as the by no means sure healing influence of some bacterial toxins seem to show (Coley, Tavel, Emmerich and others).

For the diagnosis the early and repeated microscopic investigation of the diseased part will be the only reliable method. But to make this method effectual the small removed parts must be fixed immediately after removal. Our solution seems to be commendable, as the substances composing the fixative, alcohol and formalin, are in the hands of every surgeon.

CANCER OF THE RECTUM.

WHAT HAS MODERN SURGERY ACCOMPLISHED IN ITS TREATMENT?

Read before the Chicago Academy of Medicine, January 8, 1897.

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After centuries of experimentation in which almost every known drug has been tried, we are forced to acknowledge that thus far we know of no remedy which offers the faintest assurance of the cure of cancer; if we except the arsenic pastes. The rapidity of absorption and our inability to control its action, render arsenic too dangerous to use in cancer of the rectum, except, perhaps, in cases of epithelioma at the margin of the anus. Until late years the high mortality and rapid recurrence after operation rendered this avenue of escape as hopeless to the sufferers as that of therapeutics, but since the discoveries of Lister and Kraske they have been gradually declining, and the radical removal by the knife, offers today assurance of relief from suffering, and some hope of cure to the unfortunate suffers from this disease.

The late period at which most cancers of the rectum are discovered, renders it improbable that we will ever be able to extend this hope to even the majority of such patients. Up to the present time the experience of most conscientious surgeons will agree in having advised against radical operation more frequently than in favor of it. Perhaps when the profession have become more expert in diagnosis; when the careful examination of the rectum has become more systematically practiced in all cases with intestinal symptoms, and when we shall have reduced the mortality of the operation to a minimum, the balance may move to the other side of the page, and we may offer encouragement to the large majority of such patients.

What we come to study at present is: "What has modern surgery accomplished in the treatment of these cases?" What are its limitations? What are the immediate and remote results of operation?

By modern methods we mean inguinal colotomy, resection and excision of the rectum. In colotomy we have a palliative procedure with little danger attached to it, and with no promise whatever of cure; in the others we have radical operations, with some danger attached, which offer relief from suffering together with a more or less well-founded hope of permanent recovery.

Outside of this immediate danger, there would never be any question with either doctor or patient as to which course to pursue, and it is to this particular point that I will devote the most of this paper.

The mortality of any operation depends largely upon the selection of cases. The point to be decided in each individual case is, whether it is a suitable one in which to attempt a radical cure, or not. There is a sharp division in the two lines of treatment at this point. We must either go boldly forward in our efforts to cure, or content ourselves forever afterward in that individual case, with palliative measures. I can not endorse the doctrines of some teachers that we must either excise or colostomize as soon as the diagnosis of cancer is made. The former is imperative in its demand to be done at once; the latter is a palliative measure and is only called for when the disease has progressed to a stage of obstruction, or to that condition in which the passage of fecal matter causes hemorrhages, pain and reflex symptoms.

In a large majority of cases, these symptoms, severe enough at least to call for colostomy, do not arise until the lethal period is near at hand, and then the operation alleviates the sufferings of the last few weeks. I have gone faithfully over the statistics, so far as published, year after year, and I fail to find any proof beyond the simple *post hoc ergo propter hoc*, that this operation prolongs the lives of patients to any great extent. Because one lives two, three or even four years following this operation does not prove that it was on account of it, or that he would not have lived had the operation not been done. Some cases of cancer of the rectum, of that slowly progressive type, live long periods without any operative interference; and I am perfectly sure that all the cases which have been claimed to be cured by colostomy, have been cases of mistaken diagnosis, being either simple or syphilitic proliferating ulcerations. On the other hand, I can not agree with those who hold an artificial anus to be a painful and disgusting deformity, by which no patient was ever made comfortable, and with which he was never content. At the proper period, and under proper conditions, there is no palliative procedure more benign in its effect. When properly made, such an anus can be fairly well controlled, and the normal functions of the bowels maintained. There is no reason to suppose that such an operation would retard the metastatic dissemination of the growth throughout the body, except that there is a decreased lymphatic absorption in the parts. Nor is there any proof that the growth of the tumor *in situ* is retarded by the operation, unless we accept as such the slightly increased average length of life. The worst feature of early colostomy, however, is its absolute hopelessness. To perform this operation upon a patient without the promise of a future excision, is to consign him to a certain death, which ever slowly but surely creeps upon him, which he must look squarely in the face, and from which there is no possible escape. Such hopelessness, to my mind, is worse than that of a condemned felon in his cell, who has, at least, one comfort, in that he knows the day when all his anxieties and sufferings will end. The effect of such a discouraging condition upon any man, and the fact that the very presence of the artificial anus constantly reminds him of his fatal disease, makes death almost

preferable to life. The relief afforded to a few patients in the later stages of the disease is certainly great, and I have no hesitation in advising the operation where the conditions are not favorable for the attempt at radical cure, and where the patient's sufferings are such that relief is promised by this procedure.

Beside the inconvenience and discomfort produced by the artificial anus, and the hopelessness of colostomy for malignant growths of the rectum, it is still an open question as to how much life is prolonged by this operation.

Crespin, Mathews, Adler, Allingham, Jr., and Kelsey, the great apostles of colostomy, do not claim an average of over eighteen months of life following this operation in cancer of the rectum. The statistics which I have been able to gather are very meagre with regard to details, but certainly, would not give an average lease of life of more than one year after colostomy. The claim that the operation relieves pain is partially contradicted by its most enthusiastic advocates in that they all, eventually, resort to opium sooner or later in these cases. Moreover, pain is generally one of the least distressing symptoms of the disease, unless the growth be low down, near the margin of the anus, where all admit that extirpation should be practiced. It can only have a very slight influence in preventing hemorrhage unless combined with curettage. It does relieve the constant symptoms of diarrhea, but it doses not remove the spasmodic contraction of the sphincturers when the growth is low enough down to involve the sensitive area of the gut. In fact, the most of these symptoms only appear after the period favorable to extirpation has passed by; when it is a question of colostomy or morphin; and when colostomy is done, it generally resolves itself into both.

The immediate mortality from colostomy is about 3 per cent. or less. In ordinary conditions, we can almost positively promise recovery from the operation, but unfortunately, this is about all we can promise except in cases of obstruction and stricture.

But what does the modern operation offer in place of this relief and in justification of its greater risk?

I present you herewith three sets of statistics: No. 1 showing the early results of extirpation by the perineal method; No. 2 embracing the first five years' experience with antiseptics and the sacral methods, and No. 3, embracing the last six years, including over 125 unpublished cases, contributed to me by surgeons all over the United States for use in this paper.

Let us study these tables carefully, and draw, if possible, a just estimate of the results of the modern operation, and then we can answer the above question. I have not thought it worth while to include in these tables the cases of Favet the first to perform the operation in 1763; of Lisfranc, who popularized it for a while in 1833, or of Dieffenbach, whose remarkable series of cases has been received with the greatest incredulity by the profession.

TABLE I.—AMPUTATION, OR EXCISION OF RECTUM. STATISTICS PREVIOUS TO 1885. (PERINEAL METHOD.)

Reporter.	No. of Cases.	No. of Deaths.	Mortality. Per cent.
Schmidt, Gunther's Blutigen Operationen iv—1 p. 65	33	8	24
Agnew, v. 1, p. 435	10	4	40
Gross, by Thorndyke, *Bost. M. and S. J.* 1892	193	39	20
Kelsey, *N. Y. Med. Jour.*, xxxii, p. 608	140	22	15.8
Billroth, ibid.	45	19	42.2
Allingham, Sr., Am. Ency. Surg., v. vi. p. 124	36	5	14
S. Fisher, Finet, p. 96	15	8	53
Genzmer, (Voight)	15	4	26
	487	109	22.4

TABLE II.—EXCISION AND RESECTION OF RECTUM. STATISTICS FROM 1885 TO 1892.

Reporter and Reference.	No. of Cases.	No. of Deaths.	Mortality. Per cent.
Arndt, (Kocher) *Deut. Zeitsch. f. Chir.*, Bd. xxxii, p. 1	35	10	28.5
Bardenheuer, *Centblt. f. Chir. Beilage*, No. xxiv, 1888	13	45	15.4
Hilderbrand, *Deut. Zeitsch. f. Chir.*, Bd. xxvii, p. 329	57	20	35
Konig, *Centbl. f. Chir. Beilage*, No. xxiv, 1888	60	14	23.3
*Kuster, *Bull. klin. Woch.*, 1889, p. 193	16	2	12.5
Bloch, *Centbl. f. Chir.*, 1892, p. 65	9	2	22.2
Rehn, *Arch. f. klin. Chir.*, 1891, p. 317	7	3	42.8
Arndt, (Genzmer) *Deutsch. Zeit. f. Chir.*, Bd. xxxii, p. 1	17	4	23.5
Arndt, Kraske, Ibid	10	4	40
Schroeder, (Bergmann) *N. Y. Med. Jour.*, 1892	46	5	10.9
Hochenegg, (Albert) *Bost. Med. and Surg. Jour.* 1891	88	13	14.8
Cripps	38	4	10.5
Czerny. *Deutsch. Zeit. f. Chir.*, xxxii, p. 59	109	10	9
Kelsey (McCosh), *N. Y. Med. Jour.*, 1892, ii, p. 259	7	2	28
	512	103	20

*Finet reports this 12 operations, and 8 deaths.

TABLE IV.—MORTALITY AND RECURRENCE, CANCER OF BREAST. (FROM CHEYNE.)

Reporter and Reference.	Mortality. Per cent.	Recurrence. Per cent.	Cases.
Billroth, (Winniwarter)	22	68	89
Trendelenberg, (Neuendorf)	12	68	50
Lucke, (Deitrich)	8	60	69
Czerny, (Schmidt)	6	46	82
Kronlein, (Horner)	4	68	121
Konig, (Hildebrand)	9	61	118
Bergmann. (Eichel)	7	62	43
Halsted	00	54	11
Cheyne	00	42.8	21

In the first table I have collected 487 cases, operated on by the perineal methods with a mortality of 22.4 per cent. This is not high considering the period, but unfortunately, it embraces only those cases in which the disease was situated near the anus. As will be seen later on, the operations by this method at the present day are much less fatal, the mortality being about 8 per cent.

In Table No. 2, I have tabulated 512 cases of perineal and sacral operations done after the advent of antisepsis, and the publication of the epoch-making paper of Kraske. From these there is a mortality of 20 per cent. These cases are from the clinics of special operators and there is a great difference in their individual results.

In Table No. 3. I have sought to learn the results of these procedures in the hands of a large number of operators, believing that this would be a safer test of their utility. In this table we find 259 cases with 31 immediate deaths, a mortality of 11.7 per cent. Comparing this with the previous tables, or with the statistics furnished up to 1892, we have much to encourage our hope that this mortality will eventually be so reduced as to disarm the criticism of those who still hold that it is unjustifiable on account of its danger. There is scarcely a critic of this operation but who would unhesitatingly advise the extirpation of a cancerous breast. I have thought it worth while, therefore, to insert a fourth table, the latest and most favorable upon this procedure in order to show how favorably extirpation of the rectum compares with it, and with what similarity the mortality has decreased in each with modern surgical methods and experience. With due allowance for the difficulties in diagnosis may we not hope to obtain almost as good results in cancer of the rectum as in cancer of the breast? Surely the experience of Czerny, twenty-five cases with one death, Bramann, twenty-three cases with one death, and Halsted's clinic, eight cases with no death, justifies such a hope. In my own collection no distinction or selection of cases has been made. They have been taken just as found in the journals, or described to me by the operators, and tabulated with

TABLE III.

OPERATOR.	Sex and Age.	LOCATION.	CHARACTER OF GROWTH.	RECURRENCE WHEN AND WHERE.	OPERATION.	RESULT.
Edwards, Brit. Med. Jour., 1895, i, 366	M. 61	5 inches	Carcinoma		Prel. Col., Kocher	Recovery.
Heuston, Brit. Med. Jr., 1895, i, 1141	F. 50	4 inches	do		Sacral (Murphy but.)	Recovery.
	M. 59	4 inches	do		Cripps	Rec'ry; living 3½ yrs.
	F. 51	3 inches	do		Cripps	Rec'ry; living 2¾ yrs.
Wier, Int'l Clinic, 1892, iii, 205	M. 55		do		Kocher	Recovery.
Bircher, Cent. f. Chir., 1893, 531	M. 60	1½ c	do		Osteoplastic (Kraske)	Recovery.
Gersung, Cent. f. Chir., 1893, 555	M. 43		do		do do	Recovery.
	F. 34		do		Sacral	Recovery.
Schleky, ibid., 99, 3 cases			do		Sacral	Recovery.
Stubinrauch, ibid., 1894, 1213, 5 cases			do		Sacral	Recovery.
Knecht, ibid., 281	F.		do		Perineal	Recovered; 12 yrs.
Gerster, Annals Surgery, 1893, 203	F. 49	(Anemic)	do		Sacral	Died, anemia, ½ hr.
	M.		do		Sacral	Recovery.
	M.		do		Sacral	Recovery.
	F. 50		do		Perineal	Recovery.
Miblaysen, Norsk Mag. f. Laigerd, 1893, 521	F.		do		Sacral	Recovery.
Montgomery, Ther. Gaz., 1893, 145	F. 50	Involved vag. wall; pat. in bad condition	do		Sacral	Died from suppression of urine.
McCosh	M. 49	4 inches excised	do		Sacral	Well 2 years later.
	M. 57	3 inches excised	do		Sacral	Recovery.
	F. 20		do	Liver, 9 months later.	Sacral	Recovery.
	F. 37	10 inches	do		Sacral	Well, 1 year.
	F. 63	7 in. & post. vag. wall	do		Sacral	Recovery.
Gussenbauer (Prague), N. Y. Med. Rec., 1893, i, 715		3 inches	do		Gussenbauer	Recovery.
Godler, Brit. Med. Jour., 1893, ii, 64	M.	1½ inches	Epithelioma		Sacral	Recovery.
Mathews, Int. Jour. Surg., 1893, 282	M. 30		Carcinoma		Kocher & Cripps	Recovery.
Willy Meyer, An. Surg., 1894, xix, 675	F. 51		do		Pul. Col., Sacral	Recovery.
Montprofit, Arch. Prov. Chir., '95, 747	M. 53		do	Prolapse as sequence. Anus restored after months.	Sacral	Well, 2 years.
Maylard, Trans. Glasgow Path. and Clin. Society, 1893-5	M. 35		do		Sacral	Recovery. [1 year.
Basuso, Prog. Med. Habana, 1894, 15	M.	6 c. removed	do		Sacral	Recov., no recur. after
Custovitch, Bull. Gen'l de Ther., 1893, i, 155	F. 60	7 c. above	do	Recurrence in situ 8 mos.	Perineal	Recovery.
	M. 38	8 c. above	do	None reported	Perineal	Recovery.
Aslamian, Marseille Med., 1893, p. 351	F. 63	7 c. above	Cylindrical carcinoma.	None reported	Sacral	Recovery.
Bryant, Chir. Jr., Lond., 1895, ii, 214	M.		Epithelioma	None reported 20 yrs.	Perineal	Rec'ry; living 20 yrs.
Purcell, Lancet, 1893, ii, 123	F. 46	13 inches removed	Carcinoma	None reported	Perineal	Recovery.
Boiffin, Gaz. Med. d'Nantes, '93, xii, 61	F. 55		do	None reported	Sacral	Recovery.
Hofmokl, Berichts K. K. K. Rudolf Situng, 1891, 273	M. 31	5 c. removed	do	None in 14 mos	Sacral	Recovery.
	F. 44	6 c. removed	do	None in 3 mos	Sacral	Recovery.
Englisch, ibid., 1890, 292	F. 58	3 c. removed	do	None reported	Perineal	Recovery.
Beyer, Bull. et Memoir Soc. d. Chir., Paris, 1892, 146	F. 27		do	None in 18 mos	Sacral	Recovery.
J. C. Davis, Brit. Med. Jour., '92, i, 331	M. 50	8 inches	do	None in 6 mos	Sacral	Recovery.
	M.		do	In situ 1 year	Sacral	Recovery; died 1 yr.
W. H. Brown, Lancet, 1892, i, 1235	M. 52		do	None reported	Prel. Col., Sacral	Recovery.
Vanderlin & de Buck, Le Flandre Med., 1895, Mai 7	F. 31	7 c. above anus	Epithelioma	None in 3 years	Perineal	Recovery.
Pozzi, Bull. et Mem. Soc. de Chir., Paris, 1894, 505	F. 52	11 c	do	None	Perineal	Recovery.
A. Kammer, Rev. Med. de la Suisse, 1894, 580	F.	15 c. from anus	do	None in 2½ years	Sacral	Recovery.
Monlonquit, Bull. et Mem. Soc. de Chir., Paris, 1894, 647	F. 62	6 c. above anus	do	None	Sacral	Recovery.
B. M. Ricketts, Cincinnati Lancet-Clinic, 1894, ii, 679		Involv'd entire pelvis	Carcinoma			Died from shock.
Cighorn, New Zealand Med. Jour., 1894, p. 219	M. 39	1 c. above anus	Epithelioma	None reported	Sacral	Recovery.
Marcy, Boston Med. and Sur. Jour., 1893, ii, 561	M. 44	Anus and 3½ inches	Carcinoma	None reported	Sacral	Recovery.
v. Bramann (Höhne), thesis	M.		do	None reported	Prel. Col., Sacral	Recovery.
	M.	2 inches above anus	do	None in 18 mos	Sacral	Recovery.
	F. 44	5 c. above anus	do	None in 3½ years	Sacral	Recovery.
	F. 22	2 to 8 c. above anus	do	In situ and metastasis. Death in 2½ yrs.	Sacral	Recovery.
	M. 65	Margin	do	Metastatic. Death in 4 mos.	Perineal	Recovery.
	F. 54	3 c. above anus and in vaginal wall.	do	Metastatic. Death 3 months later.	Perineal	Recovery.
	M. 59	Rectum, prostate and wall of bladder.	do		Sacral	Death.
	F. 38	4 c. above anus	do	Death without recurrence 8 mos. later.	Sacral	Recovery.
	M. 57	Margin involving urethra and prostate.	do recurrent.	None reported	Sacral	Recovery.
	M. 37	7 c. above anus	Carcinoma	8½ mos. (living)	Sacral	Recovery.
	F. 38	8 c. above anus	do	None in 20 mos	Sacral	Recovery.
	F. 60	½ to 8 c. above anus	do	19 mos. later (living)	Sacral	Recovery.
	M. 50	½ c. above anus	do	None in 18 mos	Sacral	Recovery.
	M. 52	1 to 5 c. above anus	do	None in 11 mos	Sacral	Recovery.
	F. 62	Margin to 2 c. above	do	None in 6 mos	Sacral	Recovery.
	M. 40	4 c. above anus	do	None in 5 mos	Sacral	Recovery.
	F. 56	8 c. above anus	do	None in 5 mos	Sacral	Recovery.
	M. 65		do	None in 9 mos	Sacral	Recovery.
	M. 65		do	None in 8 mos	Sacral	Recovery.
	M. 59		do	None in 5 mos	Sacral	Recovery.
	F. 48		do	None in 5 mos	Sacral	Recovery.
	M. 48		do	None in 3 mos	Sacral	Recovery.
	M. 66		do	None in 3½ years	Sacral	Recovery.
John Ashhurst, Jr.	M.	Lower portion	do			Died from exhaustion
John T. Eidman	F. 44	Lower 2½ inches	do	In situ 3 mos.; 2d op., none in 3½ yrs.	Sacral	Recovery.
J. Riddle Goffe	M. 40	P. wall 4 in. above an.	Epithelioma	Site forehead, due to traumatism.	Sacral	Recovery; died 1 yr.
	M. 34	P. wall 3 in. above an.	do	None in 1 yr.	Sacral	Recovery.
A. C. Bernays	M. 51	Upper end	Cylindroma	In situ, pelvic lymph.	Sacral	Recovery; died 1 yr.
	M. 48	Entire rectum	Colloid cancer		Prel. Col., Sacral	Died, 3 days.
	M. 28	Lower portion	Epithelioma		Sacral	Died from shock.
	M. 63	Middle and upper	Cylindroma	None in 10 yrs	Sacral	Recovery. [7 mos.
	F. 48	Upper	Epithelioma	Liver 3 yrs	Sacral	Recovery; died 3 yrs.
	F. 39	Lower half, syphilitic	Sarcoma?	None	Sacral	Recovery; 5 yrs.
	M. 54	Middle and lower	Epithelioma	None 14 mos	Sacral	Recovery.
	M.		Carcinoma	None reported	Sacral	Recovery.
	M.		do	None reported	Sacral	Recovery.
	M.		do	None reported	Sacral	Recovery.

OPERATOR.	Sex and Age	LOCATION.	CHARACTER OF GROWTH.	RECURRENCE WHEN AND WHERE.	OPERATION.	RESULT.
Joseph B. Bacon	M. 34	Middle third	Carcinoma	Mesentery and omentum.	Sacral	Recovery.
	M. 55	Middle third	do		Sacral	Died from shock.
	F. 34	Upper third	do	3 mos. in gut	Sacral	Recovery.
	M. 35	Middle and upper	do	None reported	Sacral	Recovery.
	M. 59	Middle third	do	None reported	Sacral	Recovery.
J. M. Mathews	M. 57	Lower Rectum	do	Recurrence 1 yr.		Recovery.
	F. 17	Lower Rectum	do	Recurrence 2 yrs.		Recovery.
	M. 65	Lower Rectum	do	Recurrence 6 mos		Recovery.
	M. 60	Lower Rectum	do	None in 6 yrs		Recovery.
	M. 20	Lower Rectum	do	Recurrence 16 mos		Recovery.
	M. 38	4 inches up	Sarcoma	Recurrence 8 mos		Recovery.
	F. 32	Lower Rectum	Carcinoma	None reported		Recovery.
J. A. Wyeth	F.		do		Sacral	Died, 36 hours.
	M.		do	Recurrence	Sacral	Recovery.
F. Kammer	M. 22		do	Recurrence 6 mos	Sacral	Recovery.
	M. 65		do	Recurrence 1 yr.	Sacral	Recovery.
	M. 63	Several inches up	do		Sacral	Died from shock.
	F. 58		do	None in 1 yr	Sacral	Recovery.
	F. 54	Lower part sigmoid	do	None reported	Sacral	Recovery.
	M. 42	Upper portion	Circular cancer.	None in 1½ yrs	Sacral	Recovery.
	F. 42	Lower rectum & anus	Carcinoma	Recurrence 1 yr	Sacral	Recovery.
	M. 68	Several inches up	do		Sacral	Died next day.
N. B. Carson	M. 54	Lower 2 inches	do	None in 1 yr	Sacral	Recovery.
	M. 48	Lower 1½ inches	do	None reported	Sacral	Recovery.
	F. 52	Lower 3½ inches	Sarcoma		Sacral	Died, cerebral, 4 wks.
Littlewood, Lond. Lancet, 1896, ii, 745	M. 46	Lower 3 inches	Carcinoma		Sacral	Died, shock, 6 wks.
	M. 65	2 to 5 inches above	Colloid epithelioma.	None in 2 yrs	Sacral	Recovery.
	M. 42	Lower 2½ inches	do	Liver 1 yr	Sacral	Recovery.
	M. 54	Lower 2½ inches	do	None in 1 yr	Sacral	Recovery.
	M. 65	Margin to 2 inches	do	None in 9 mos	Sacral	Recovery.
	M. 55	3 to 7½ inches up	do	None in 6 mos	Sacral	Recovery.
	F. 37	3½ to 7 inches up	do	None reported	Sacral	Recovery.
	F. 54	3½ to 5 inches up	do	None reported	Sacral	Recovery.
	M. 48	3 to 6 inches up	do	None reported	Sacral	Recovery.
N. Senn, 24 cases			Carcinoma?			Deaths: 1 hemorrh'ge, 1 shock, 22 rec'v'rs.
Lejears, Rev. Gen. Clin & Ther., Paris	F. 40	Lower portion	do	None reported	Perineal	Recovery.
	F. 31	Lower portion	do	No return in 1 yr	Sacral	Recovery.
	M. 42	Lower portion	do		Sacral	Death, 3 days, probably iodoform.
	M. 28	Lower portion	do		Prel. Col	Result unknown.
Kelsey	M. 58	3½ in. above anus	do	None in 2 yrs	Cripps	Recov'ry, continence.
Broome	M. 35	Anus and 6 in. gut	do	None in 1 yr	Sacral	Recovery.
Routier, B. & M. de la Soc. Chir., Paris, 1889	F. 29	From 3 to 5 in. above.	do	None in 1 yr	Sacral, end to end suture.	Recovery.
Jessops, Brit. Med. Jour., Aug. 24, Oct. 12, '89, 7 cases						6 recoveries, 1 death.
Goode & Dahl, Brit. Med. Jour., 1889		Anus and rect., 5 in	Epithelioma	Liver 1 yr	Cripps	Recovery.
P. H. Millard	M. 40	5 inches removed	Carcinoma	None in 2 yrs	Cripps	Recovery.
Dr. Mynter, Buffalo	M. 41	Anus and 3 inches	do	None	Right ischio-rectal fossa was opened.	2 operations; recovery.
Geo. Gay, Boston	M. 47	Entire wall of gut	do	None in 3 yrs	Cripps	Recovery, 3 years.
	F.	Semicircular growth	do		Cripps	Recovery.
L. L. McArthur, Chicago, Am. Jr. Ob.	F.	2 inches of anus	do		Prel. Col. and perineal excision.	Recovery.
	F.	Anus and 2 in. of gut.	do		Prel. Col. and perineal excision.	Recovery.
	M.		do		Prel. Col., sacral	Recovery.
Bacon, N. C. Jour., 1892, p. 341	M. 31	Anus and 3 inches	do	None in 1 yr	Sacral	Recovery, 1 year.
J. McJ. Gaston, Gadlaid's M. Jr., 1892	M. 62	1 inch above anus to [junction colon.	do		Perineal excision, excluding sphincter.	Died from sepsis, 7 days.
H. W. Pigeon, Brit. Med. Jour., 1891	F. 44		do		Intussusception, gut drawn down, cut off	Died, 2 days.
L. J. Krouss, Cincinnati L.-C., 1891	M. 65		do		Cripps	Died, 3 days.
T. T. Paul, Br. Med. Jour., 1895, i, 519	M. 47	2¾ inches	do	None in 14 yrs	Cripps	Recovery.
	F. 56	2½ inches	do	Situ 2½ yrs	Cripps	Recovery, 2½ yrs.
	F. 37	7 inches	Sarcoma	None in 1 yr	Sacral	Recovery.
	M. 46	6½ inches	Carcinoma	None in 10 mos	Sacral	Recovery.
	M. 41	7 inches	do	None in 3½ yrs	Sacral	Recovery.
	F. 55	5 inches	do		Sacral	Died with exhaustion due to delirium.
	M. 56	8 inches	do	Situ 2½ yrs	Sacral	Recovery.
	F. 29	4 inches	do	Situ 2½ yrs	Cripps	Recovery.
	M. 59	3 inches	do	None in 2 yrs	Cripps	Recovery.
	M. 64	2 inches removed	do	None in 21 mos	Sacral	Recovery.
	F. 42	4 inches	do	Liver 10 mos	Cripps	Recovery.
	M. 56	4 inches	do	None in 1¼ yrs	Sacral	Recovery.
	M. 64	4½ inches	do	None in 1¼ yrs	Sacral	Recovery.
	M. 60	4 inches	do		Sacral	Died.
Nepous, Clin. & Crit. Chir., '94, p. 430	F. 56		do	None in 6 yrs	Sacral	Recovery.
Tuttle, J. P	F. 58	From anus 3½ in. up.	Adeno-carcinoma.	None in 3½ yrs	Kocher, end to end suture.	Recovery, no incontinence.
Same	F. 62	From 1 in. above anus to 4½ in.	Scirrhus carcinoma.		Sacral (osteoplastic), gut sutured to anal margin.	Death sixth day from cerebral symptoms and surgical mania. Postmort'm showed absolutely no peritonitis, the wound healthy and the stitches holding well.
Same	M. 58	Margin of anus 3½ in. up.	Adeno-sarcoma.	In situ 9 mos. later	Sacral; gut not sutured; peritoneum not opened; wound left to granulate.	Recovery. Death 18 mos. later from recurrence; no incontinence till late in recurrence.
Same	M. 45	1½ to 5 in. from anus, 7 inches removed.	Medullary carcinoma.	None in 2 yrs	Sacral; gut sutured end to end.	Well when last seen.
Same	M. 62	Margin to 2½ in. above	Epithelioma	None in 3 yrs	Sacral; gut telescoped through anus and sutured to skin.	Recovery.
Same	M. 50	1 to 5 in. above anus, 6 inches removed.	Adeno-carcinoma.	None in 20 mos	Sacral; gut sutured end to end; small post-fistula healed in 4 months.	Recovery; well at present time.
Same	M. 49	1 to 6 in. above anus, 7 inches removed.	do		Sacral; gut sutured in sacral wound.	Recovery; patient died 2 mos. later from pneumonia.
Same	F. 35	Margin to 2½ inches above anus.	Lympho-sarcoma.	None in 9 mos	Perineal	Recovery.

OPERATOR.	Sex and Age.	LOCATION.	CHARACTER OF GROWTH.	RECURRENCE WHEN AND WHERE.	OPERATION.	RESULT.
Halstead	F. 46	Lower quarter	Carcinoma	4 yrs. later in lymphatics of groin.		Living now, 6 years.
	M. 64	Lower third	do	Liver metastasis		3 years later died.
	M. 33	Lower third	do	Liver metastasis		9 mos., died.
	M. 39	Lower two-thirds	do	Local in 1 yr		Living, 2½ years.
Finney, clinical assistant	F. 33	Lower third	do			Well 1½ years later.
	F. 38	Lower third	do	Liver and stomach		Death, 6 mos.
	M. 44	Middle third	do			Living, 3 mos.
	F. 56	Middle third	do			Living, 3 mos.
Dorsett	F. 40	Right side sphincter.	Epithelioma	6 mos. later 3 in. up		Death by anemia.
	F. 55	Sigmoid and upper rectum.	Carcinoma		Death followed. Op erated for artificial anus in 2 weeks.	
Willy Meyer	F. 36	Lower end 3 inches above anus.	do		Sacral	Died 11 days later, iodoform poisoning.
	F. 40	Lower end			Sacral	Died, 3 mos., syphilis of brain.
	M. 46	Lower end	Ulcerated carcinoma.		Sacral	Died, 7 days.
	M. 52	2½ in. above anus	do	2 yrs. later in xi & xii sacral vertebræ.	Sacral	Cured.
	M. 58	Rectum, anus	do		Sacral	Recovery.
	M. 42	High up	Carcinoma		Sacral	Died from shock.
	F. 49	5 in. above anus	do	Liver 1½ yrs. later	Sacral	Recovery.
	F. 32	2 in. above anus	Ulcerated carcinoma.		Osteoplastic	Died, 1 month.
	M. 48	3 in. above anus	Carcinoma involving prostate & blad'r.		Osteoplastic	Died, 5 days.
S. T. Earle	M. 70	1 in. above internal sphincter.	Adenoma	15 mos. later above previous site.	Perineal	Recovery.
	M. 42	1 in. posteriorly, 2 in. anteriorly.	Fibro-adenoma.	None	Perineal	Recovery, 12 mos.; incontinence.
	F. 25	2 in. above anus	Small cell sarcoma.	None	Kraske	Recovery, 8 mos.
McKay, Maritime M. News, '95, p. 221	M. 53	¾ to 4 inches	Carcinoma	None in 2 yrs	Kocher	Recovery.
	M. 52	1½ to 4½ inches	do	Recurrence 2 yrs.; 2d operation.	Kocher	Recovery.
	F. 60	1½ in. above anus	do	None in 2 yrs	Kocher	Recovery.
Bishop, Lon. Lancet, 1895, ii, 849	M. 58	Where adenoid polyp had been removed 1 year before.	do	None in 1 yr	Perineal	Recovery.
	M. 20		do	None reported	Prel. Col., perineal.	Recovery.
Powers, Jr. Am. Med. Ass'n, 1895, xxv	F. 27		do		Sacral	Death.
	F. 40		do	None in 2 yrs	Sacral	Recovery.
	F. 35		do	None in 2 yrs	Sacral	Recovery.
	M. 52		do	None in 2 yrs	Sacral	Recovery.
	F. 39		do	None in 2 yrs	Sacral	Recovery.
Van Arsdale, Sept., 1892	M. 54	Above anus	do	18 mos. later small nodules near anus.	Sacral	Recovery.
Poulton, Austral. Gaz., 1894, 85	M.			None in 9 mos	Perineal	Recovery.
Werder, N. O., Pittsburg M. Rev., 1894	M.	1½ to 6 inches	Carcinoma	None reported	Sacral	Rec'ry, incontinence.
Heath, by Platt, Med. Chron., Manchester, 1894, i, 419 x	M. 34	4½ inches	Epithelioma		Perineal	Died from shock.
Jones, ibid	M. 54	4 inches removed.		Liver 9 mos.	Perineal	Recovery from operation; died, 11 mos.
	M. 42	3 in. above anus	do	Liver 6 mos.	Perineal	Recovery from operation; died 6 mos.
	M. 60	Low down	Carcinoma	In loco 13 mos	Perineal	Recovery.
	M. 37		do	In sigmoid 6 mos.	Perineal	Recovery; died 8 mos.
	F. 44	Lower end	Epithelioma	Liver 6 mos.	Perineal	Recovery; prolapse; died, 2 yrs.
	M. 32	1½ in. above anus	do	In skin 3 mos.; removed; no recurrence.	Perineal	Recovery.
	M. 58	Lower end	do	None reported	Partial perineal	Recovery.
Hardie, ibid	M. 63	Lower end	do	2 yrs. in toe, leg amputated; none in 5 yrs.	Perineal	Recovery.
Whitehead, ibid	F. 50		do	In loco 15 mos	Perineal	Recovery; living 4 yrs. later.
	M. 40		do	None reported	Perineal	Recovery.
	M. 57	2 in. above anus	do	In liver; died 6 mos	Perineal	Recovery.
	M. 50	One side only	do	None in 2 yrs.	Perineal	Recovery.
	M. 48	2½ inches	do	None in 18 mos.	Perineal	Recovery.
	M. 19	3 inches removed.	do	None in 9 mos	Perineal	Recovery.
	F. 33	5 inches removed.	do	None in 3 mos	Perineal	Recovery.
Rehn, Cent. f. Gynaek., 1895, No. 10.	F. 45		Carcinoma		Vaginal	Died, 3 days.
Edwards, Lancet, 1895, 1, 408	M. 61	4 inches removed.	do	None in 4 yrs.	Sacral	Recovery.
	F. 50		do	None reported	Sacral	Recovery.
Southham, ibid	F. 48	5 inches removed.	do	In loco 12 mos.	Perineal	Recov'ry; living 2 yrs.
	F. 42	3½ inches removed.	do	None in 6 mos	Perineal	Recovery.
Pitts, Lancet, 1895, i, 1235	F. 33	3½ in. above anus	do	None	Perineal	Recov'ry; living 2 yrs.
	M. 23			In liver 2 yrs	Perineal	Recovery; living.
M. Zangarol, Alexandria	F. 34	Rectum and vagina	Epithelioma	None in 18 mos.	Sacral	Recovery.
	F. 40			None in 6 mos	Sacral	All cases suppurated, have retention, and all recovered.
	M. 38			None in 4 mos	Sacral	
	M. 40			None in 4 mos	Sacral	
Rectus, Union Med., Paris, 1893, 241	M. 72	2 c. above	Carcinoma	Slight in liver; 2d op. None in 5 yrs.	Perineal	Recovery.
	M. 62	4 c. above	Epithelioma	None in 5 yrs.	Perineal	Recovery.
	M.	High	Carcinoma	None in 3 yrs	Sacral	Recovery.

The following synopsis of a thesis by M. Finet, of Paris, which came into my possession after my paper was written, portrays the results of the operation in continental Europe. It is interesting to compare this with that made from the cases collected by myself, and which follows below. Including these we have over 1,600 cases from which to draw conclusions, and it seems to me they are convincing.

SYNOPSIS FROM FINET'S THESIS.

Immediate deaths	66
Deaths under 1 year, cause not given, 8; deaths between 1 and 2 years, 3; deaths between 2 and 3 years, 1	12
Deaths from recurrence in situ, under 1 year, 17; metastasis under 1 year, 12; in situ between 1 and 2 years, 2; metastasis between 1 and 2 years, 1; in situ between 2 and 3 years, 3; metastasis between 2 and 3 years, 1	36
Living with recurrence under 1 year, 18; under 2 years, 1; under 3 years, 1; over 3 years, 2	22
Living without recurrence under 1 year, 124; under 2 years, 11; 3 years, 23; 4 to 5 years, 10; 5 to 6 years, 7; 6 to 7 years, 6; 7 to 8 years, 5; 8 to 10 years, 5; 10 to 11 years, 3; 11 to 12 years, 1; 12 to 14 years, 1; 14 to 15 years, 2; 15 to 16 years, 1; over 16 years, 2	201
Died without recurrence after 4 years, 4	4
Mortality, 19 per cent.	341

SYNOPSIS FROM MY OWN TABLES.

Immediate deaths	31
Deaths under 1 year, recurrence in situ 8, by metastasis 6; between 1 and 2 years, recurrence in situ 4, by metastasis 3; between 2 and 3 years, recurrence in situ 4, by metastasis 2; after 3 years, recurrence in situ none, by metastasis 1	28
Living with recurrence under 1 year, 6; between 1 and 2 years, 5; 1 each 2, 4, 2, 2, 2½, 4 years	17
Living without recurrence under 1 year, 90; over 1 and under 2 years, 48; over 2 and under 3 years, 20; over 3 years, 23	181
Mortality, 11.7 per cent.	257

Sacral, 173 cases, 23 deaths; mortality, 13.3 per cent. Perineal, 70 cases, 5 deaths; mortality, 7.1 per cent. Vaginal, 1 death; anal, 1 death; not given, 1 death.

the sole desire to learn the truth concerning this operation and not with the view of confirming a preconceived opinion. They embrace the results of all grades of operators, working under favorable and unfavorable circumstances, and if under these conditions such a low mortality can be obtained, what may not be done by experts in properly equipped hospitals and in carefully selected cases.

In the tables we have not separated the perineal from the sacral operations, because we hold that the latter operations should not be done when the growth is low enough to be *thoroughly* removed by the former. All of the sacral operations have been classed under one heading, because they are more or less modifications of that one method, the "Kraske." Of these, there are 173 with 23 deaths, a mortality of 13.3 per cent. Of the perineal excisions there are 70 with 5 deaths, a mortality of 7.1 per cent. In the remainder the operator failed to state just what operation was performed, except in one fatal vaginal extirpation. Cheyne, in the Letsonian lectures for 1896, gives a much wider variation between the two operations. He says "Konig's total mortality is 38 per cent; Billroth's 34 per cent., Kocher's 28 per cent., Albert's 18 per cent., Iversen's estimate as regards the Kraske operation 25 per cent. and Czerny's with the perineal operation 5.4 per cent., with the sacral operation 19.4 per cent. So far as one can judge from a large number of reports, the mortality after the perineal operation seems to be about 8 per cent., after the sacral operation from 18 to 20 per cent., but the results vary much in the hands of different surgeons, probably in accordance with the selection of cases and the after treatment of the wound and in both instances, it can in all likelihood be somewhat reduced in the future" (p. 95). Cheyne draws his conclusions, however, from three operators and admits he is biased in favor of the English or perineal method. The difference in the death rate is due, first to the magnitude of the operation, second, to the involvment of the peritoneum, third, to the disturbance of the adjacent organs and fourth, to the fact that the higher the tumor the later will it be observed, and consequently the less favorable will be the condition of the patient for operation. Hemorrhage will not account for it, as there is less of this in the sacral than in the perineal method. The two operations have each their own field and the prognosis is more grave in the one, simply because the condition calling for it is more serious.

The results of any undertaking should always be estimated by taking into consideration the difficulties encountered and the end to be attained. In the radical treatment we undertake a serious operation, and for what? First, with the hope that by timely eradication, we may permanently cure. Unfortunately, statistics do not prove that we accomplish this desire in the majority of cases, and were this result the only object of the operation, it would hardly have been advocated by the many conscientious and brilliant surgeons who have done so. And yet, our results are not without encouragement from this point of view. Of the 259 cases we have been able to trace 219 for a certain number of years. There were 8 recurrences *in situ*, and 8 metastases within one year; there were 9 *in situ* and 3 metastases, between the first and second years, there were 4 *in situ* and 7 metastases, between the second and third years, and four all told occurring later than the third year. These numbers are important as showing how rapidly the percentage of recurrence decreases after the first year is past, and that when three or four years have gone by, we can almost assure our patients that they are permanently cured. The balance of these cases may be summarized as follows:

Well, when last heard from:

Under 1 years, subsequent to operation,	90
Over 1 year and under 2 years,	45
Over 2 years and under 3 years,	20
Over 3 years and under 4 years,	12
Over 4 years,	14

Assuming then, that these cases which pass beyond three years without recurrence are comparatively safe from the disease, we may, without assumption, thus claim a cure of 10 per cent. of those cases which survive the operation, and a more or less well-grounded hope for the 155 cases, 70 per cent., in which no recurrence has as yet shown itself.

But the purpose of the operation is not limited to absolute cure. Even when this is not obtained it accomplishes all and more than has been claimed for other palliative measures. The relief from pain, the danger of obstruction, the vesical and sphincteric tenesmus, the irritating discharges and the impeded functional activity of the bowels, are all relieved and far more completely than by any other means. It may be said that where suppuration takes place, and it does in the majority of these operations, we have not obliterated the discharge. There is a great difference between a temporary, free and unobstructed, discharge of pus from a granulating wound, from which the surrounding skin may be protected by proper surgical dressings and the perpetual, feculent, sanious, irritating discharge from an ulcerated cancerous growth. The very substitution of the former for the latter, the removal of this odor, disgusting both to the patient and to his friends, is one of the happiest results of extirpation, and a result which no other method can attain. With regard to the control of the movement of the bowels, where typical resection or excision has been performed, and the sphincters have been left intact, this function remains unimpaired, and the operation thus possesses all the advantages over colostomy that a normal anus has over an artificial one. Where the sphincters have been removed, and where it has been necessary to attach the resected rectum to the sacral wound, other things being equal, there is little choice between this and the inguinal artificial anus. They will, each, have to be controlled by functional regulation of the bowels and the application of suitable trusses or compresses to the part. Within the past few years, however, two improvements have been devised for the relief of these unpleasant sequences of excision. Gersuny proposed in 1892, that where the sphincters had to be removed, we might in a degree restore their functions by twisting the gut twice upon itself before suturing it in the wound. This operation has been done a number of times with more or less success. It certainly does accomplish the result for a time, but those who have had the most experience with it, are not confident as to its permanent efficacy. It adds no risk to the operation, consumes no time, and should, therefore, be done in every suitable case.

The second method for the prevention of incontinence is that proposed by Jaennell and Willems, and consists in making an incision through the inner fibers of the gluteus maximus muscle, drawing the resected rectum through this aperture, and suturing it to the

skin and muscular fibers. By this method, Jaennell claims to have obtained voluntary control over the fecal movements, and moreover, to have reduced the danger of peritoneal infection by removing the fecal discharges entirely without the operative field. I have had no experience with this operation, but it appears to be logical and coming from a source in which I have great confidence, I should look favorably upon it. We shall have more to say upon the subject of fecal incontinence when we come to study the sequences of this operation. It suffices here, to quote from one of the most enthusiastic supporters of colostomy on this point:

"In a small proportion of cases there will be a complete incontinence; in a greater number there will be partial control over the evacuations; in the majority, the control will be sufficiently complete to prevent the occurrence of any annoying accident."

Prolongation of life.—If we look at the subject with regard to the average lease of life which follows excision, we certainly meet with much encouragement. In the 219 cases which we have been able to follow, the average length of life is over 2 years and 3 months. This percentage has little meaning from the fact that 181 of the cases were still living at the time of the report, without any recurrence or other reason to believe that their lives would be materially shortened.

The best authorities agree that in cancer of the rectum unmolested, the average length of life is a little over one year. Assuming that all our patients had died at the period of last report, we would still have doubled the length of their days. How much more gratifying is it to remember that, out of 259 patients there are 181 to whom there still remains a hope, if nothing more; but to most of them an assurance of immunity from the disease. This is the final and, to my mind, the greatest argument in favor of extirpation; that it lends to our patients that supreme moral support that can not be over-estimated, founded on the belief that they are cured. The possibility of recurrence will always be present to some of these patients, warning them to seek relief at the very first indication. But the fact that they have already been relieved once, will give them confidence for the future, and thus remove in a large degree the depressing influence. Contrast this position with one who lives with his cancer undisturbed, and only palliated by an artificial anus, with a dreadful avalanche, as it were, slowly but surely sliding down upon him, with no possibility of escape, with only a few brief months between him and certain death, and you have the difference between excision and colostomy. For my part I can not refuse this hope to any case suitable for extirpation.

CAUSES OF DEATH.

Let us now look briefly into the causes of death from this operation. Out of the thirty-one immediate deaths reported above, nine were from shock, one from hemorrhage, eight from septic peritonitis, one from unknown cause, two from exhaustion (some weeks after the operation), one from atheromatous disease, two from cerebral symptoms, one from purulent empyemia (which developed the night before the operation), one from suppression of urine, two from iodoform poisoning and three from anemia.

Having heard so much of the dangers of hemorrhage from this operation, I was, indeed, surprised to find only one death reported from this cause, although I am firmly convinced that the operation can be done with less bleeding than that in an ordinary Whitehead operation for piles. The question of shock depends more upon the personal equation than upon the operation or the operator. I have seen a man die from shock occasioned by cauterizing a phagedenic bubo, and another from amputating a big toe. The patients who die from shock following this operation done in a reasonable length of time, would probably have succumbed under any surgical procedure. They are not proper subjects for surgical operations, and a more careful study of the personal element to be encountered in each case, will undoubtedly reduce the mortality from this cause. Three of the cases called shock among the deaths, were patients with flabby, fatty hearts, on which the operators themselves say they should never have operated. Moreover the injection of serum and normal saline infusions, promise in the future to greatly reduce the danger from this source.

Septic peritonitis is the second most frequent cause of death from this operation. It is generally supposed to be due to infection of the peritoneal cavity by the discharge of fecal matter into it, after the operation has been completed. Of the 8 cases referred to above, only 1 could possibly have been due to this cause. My own impression is, that the infection takes place during the operation, and is due to the practice of cutting off the intestine before the peritoneal dissection has been completed and this cavity walled off or closed. It may easily occur through the operator introducing his finger into the rectum in order to facilitate the isolation of the tumor and then reintroducing it into the wound where the peritoneum is exposed. The technique of the operation, as I shall describe it later, is particularly designed to avoid this accident and to control hemorrhage. Certainly, the majority of these deaths were avoidable.

The deaths from cerebral symptoms, without any condition in or about the wound to account for such a result, could not be foreseen or guarded against. They were the results of personal diathesis, of which the patient was either unaware or failed to appreciate the importance. In my own case, the history of old meningitis, with attacks of mania, which was concealed from me until these symptoms had recurred after the operation, might have deterred me from operating had I known them. I never saw a healthier operative field than the postmortem showed in this case, and there was absolutely nothing connected with it to account for death. The death from empyemia was certainly not due to the operation.

Those deaths due to exhaustion from prolonged and excessive suppuration, and those from suppression of urine, anemia and iodoform poisoning, are accidents, and complications incident upon every surgical procedure, and while they may be avoided in a majority of cases, they will continue to occur occasionally, however perfect our technique.

Of the thirty-one deaths reported above, it appears to me that at least eleven of them were avoidable, some almost inexcusable. This would reduce the mortality materially.

(To be continued.)

Decline in Cocain.—Cocain has been declining in price very rapidly of late, owing to heavy shipments of the leaves of the erythroxylon coca plant from Peru and Bolivia. The drug is now quoted at $2.50 an ounce. A few weeks ago it was nearly $4 an ounce.

NOTES ON MY TRIP TO ATTEND THE SECOND PAN-AMERICAN MEDICAL CONGRESS, IN MEXICO CITY, NOV. 16–19, 1896.

Read before the Cambridge Society for Medical Improvement, Feb. 22, 1897.

BY AUGUSTUS P. CLARKE, A.M., M.D.
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On Saturday evening November 7. we took the Fall River Line to New York and from there a train on the Pennsylvania road to Washington, where a change of coaches was made by the way of Atlanta for New Orleans, which we reached in the early part of the day. Leaving New Orleans by the evening train we passed through the famous Teche country, noted for its extensive fields of cotton and rice. Our course was then directed through the flat lands of Texas. After leaving Houston and San Antonio our grade grew more ascending. When we reached Spofford Junction we took the International Railroad for the Rio Grande and crossed by the way of Eagle Pass to Ciudad de Porfirio Diaz, on the Mexican border. The officers of the Mexican Custom House were exceedingly courteous and endeavored in every way to facilitate matters for our convenience. The grade at Sabinas was 1,000 feet and at Monclova, 2,000 feet above the level of the sea.

The next important station was Trevino, the junction of our Mexican International with the Monterey and Mexican Gulf to Monterey and Tampico. The course of the track now is almost due west with a steady upgrade to higher altitudes until it reaches 3,753 feet at Jaral.

In this vicinity were seen growing not only cactus plants but also large fields of carefully cultivated agave Mexicana or the maguey. This plant furnishes the natives with the material for their building. Its leaves are used for paper, cordage and for many other purposes. From its juice is prepared the spirituous liquor called pulque.

We pass along the borders of the great Bolson de Mapimi and come to Torreon, where the Mexican International road crosses the Mexican Central and extends to the City of Durango. Our course, however, was from Lerdo, situated in the very heart of the cotton district of the Nazas and San Juan Valley and southward along the Mexican Central until we reach the Tropic of Cancer and Fresnillo, the first city within the torrid zone. This is the great mining country noted for its fabulous wealth where silver is obtained in great abundance. We continue our ascent until we reach Zacatecas, which has an altitude of upward of 8,000 feet.

The next important place was Aguas Calientes, signifying "hot waters," noted for its hot baths, of the benefits of which we availed ourselves on our return.

Lagos, Leon and Silao are now passed. The latter is where we took train on our return to Guanajuato, a terraced city in a mountain defile. Here is one of the famous mints of the republic, coining a half million of gold and five millions of silver annually, and here are also the large smelting and reduction works, besides manufacturing establishments.

We visited the *panteon*, a cemetery containing ten acres of ground enclosed by walls, perhaps ten feet high. Bodies are deposited in chambers. Here there is an immense sub-cemetery where the bones are placed at the expiration of the chambers leases. By a winding stairway descent is made into this great charnel-house, which is nearly nine hundred feet long, twenty feet wide, and more than twenty feet high. The room is arched and well lighted containing all that is left of more than 30,000 Mexicans. Bones and skulls are piled up at either end of this storehouse, indiscriminately, without reference to ownership.

The next important station south of Silao is Irapuato, where on our return we took train for Guadalajara. Here we visited the Hospicio, an extensive institution for charity and religious instruction, containing twenty-three patios adorned with an abundance of flowers and with numerous fountains. The kitchens and dining halls were of colossal dimensions. The large and airy wards were bountifully supplied with bedding, and the whole establishment bore evidence that ample provision had been made for its inmates, who were sick and disabled children.

Our journey is continued through Salamanca, Celaya and Querétaro, noted for its aqueduct, which conveys the water to the city five miles across the plain. Though it has eighty arches it is not so long as tho aqueduct of San Cosme at the capital, which has 900, but impresses the traveler more on account of its greater height, some of its arches being upward of ninety feet in height.

From this point onward the scenery grows more and more beautiful with its mountains and valleys and extensive haciendas, owned by rich Spaniards and under a high state of cultivation. The road now ascends. The train toils and climbs to overcome the resisting grade. At Marquez the highest point is reached, being at an elevation of 8,132 feet above the level of the sea.

In approaching the great city the tourist is on the watch for a view of the Tajo de Nochistongo, the great drainage cut commenced in the year 1607 with the purpose to drain the lakes on the plain of Mexico and to prevent the inundation of the city. The work was afterward abandoned, but a drain has recently been constructed on a more magnificent scale, forty-five miles in length, having a tunnel through the mountains of nine miles, not surpassed in size by the ancient cloaca maxima at Rome. A special opportunity was afforded us by the government to spend a day in viewing this work, which was said to be the most stupendous ever undertaken for the drainage of a great city and valley. The canal, which throughout its entire course has a steep and rapid descent, opens out into the Tula River, then into the Pánuco River, where the waters are disembogued into the Gulf of Mexico and carried out into the sea.

At Huehuetoca the first view of the snow-capped mountains is to be had. The volcanoes of Ixtaccihuatl and Popocatepetl and the plain of Mexico appear. At 6 P.M. on Friday, November 13, our journey to the capital of Mexico ended at Buena Vista station of the Mexican Central Railway. The station was now crowded. The reception committee, professors of the University of Mexico, and also Mayor Camacho and his wife, greeted our coming.

Prominent among the delegates on our train were Dr. E. Persillier La Chapelle of Montreal, Canada, President of the Provincial Board of Health of Quebec; Dr. Irving A. Watson of Concord, N. H., the Secretary of the American Public Health Association; Dr. E. P, Benoit, also of Montreal, Editor of *L'Union Médicale du Canada;* Dr. James D. Spencer, Fellow of the New York Academy of Medicine; Dr. A. Wal-

ter Suiter of Herkimer, New York, Secretary of the National Federation of State Medical Examining and Licensing Boards. McGill University of Montreal was repesented also by Dr. J. C. Cameron, Professor of Obstetrics and Gynecology, Dr. Stewart, Professor of General Medicine, and Dr. Blackadder. On our train were also Dr. Alonzo Garcelon, ex-governor of Maine; Dr. Joaquin Yela, Consul-General of Guatemala; Dr. T. M. Calnek, Surgeon of Hospital de San Juan de Dios, San José, Costa Rica; Dr. David Cerna, Professor of Physiological Chemistry of the University of Texas. Dr. A.W. Parsons of Mexico, sent by the Mexican Committee, met us at Zacatecas and accompanied us to Mexico. A representative of the "*Two Republics*" met the train at Tula and assisted in giving us a warm welcome on our approach. Several of the gentlemen on the train were accompanied by ladies. My daughter, Miss Inez L. Clarke, A.B., was with the party.

The City of Mexico to be appreciated should be seen. It has an altitude of upward of 7,400 feet above the level of the sea. In the National Theater, in Calle de Vergara, the formal opening of the Congress took place on Monday evening, November 16, and was presided over by President Diaz, who was attended by his Ministers of State, prominent military and other officers, and by many citizens of the Republic. The boxes were occupied by the leading fashionable ladies of the city. The central portion of the edifice was reserved for the officers and members of the Congress and their ladies. The exercises consisted of addresses by President Diaz and by the organizing committee of the Congress. The addresses were followed by instrumental music and by a chorus of voices.

During the meeting of the Congress we were favored with an invitation to visit President Diaz and his wife at the Castle of Chapultepec, the White House of the Republic of Mexico. Here the members of the Congress were royally entertained. Not only carriages in abundance were provided for us, but all the substantials which go to cheer the inner man.

Mrs. Camacho, a wealthy lady, the wife of the mayor of the city, gave a reception at her Mexican mansion. Refreshments and music were generously provided. The sweet singing by the rich and cultured voices produced a striking impression upon the hearers. The entertainment given on another evening was by the Jockey Club, composed of wealthy gentlemen, and modeled after one of the same name in London. Another reception was tendered to the members of the Congress and ladies by the Honorable City Council of Mexico in the municipal palace. Here refreshments on an extensive scale were again served.

In regard to the formation of the Congress, it may be said that it was composed of representatives from almost every country of the western hemisphere. At the opening of the Congress the Secretary-General said that about six hundred physicians were in attendance and were accompanied by upward of one hundred ladies. The reading of 294 papers was announced. In the Section on Obstetrics, Gynecology and Abdominal Surgery the titles of some forty papers were entered.

The work of the Congress was divided into twenty-two sections; of these several met in the Mineria, or the historic School of Mines, which was established by contributions from wealthy Spanish gentlemen during the reign of the viceroys and which is located on Calle San Andrés. This edifice underwent repairs for the reception of Gen. U. S. Grant on the occasion of his visit to Mexico in 1880. Other sections of the Congress were held in the College of Medicine, once the "holy inquisition" building, and also in the Military Hospital.

On Sunday evening, November 14, previous to the opening meeting of the Congress, a delightful entertainment was given by the faculty of the National School of Medicine of Mexico to the delegates. The visitors met in the great hall of the school, the old building of the inquisition, as before mentioned, which, though dreary in its general aspects, presented then a scene of no unusual interest. A short address of welcome was made by Dr. Carmona y Valle, President of the University. He said that the Pan-American Medical Congress differed from other medical associations in that, while the latter extended invitations in their own name the former did so on behalf of the country where the meetings were to take place. The gatherings, he said, had therefore an international significance. The delegates, he further said, had been invited to this informal reception that he might have the pleasure of introducing them to the faculty of the school and that he might give all an opportunity of becoming acquainted with one another. After some portion of the evening had been devoted to conversation the guests were directed to the magnificent salon of the Secretary, where champagne and refreshments were liberally served.

Prominent among the members of the faculty of the school who did honors most courteously were Dr. Carmona y Valle, president of the college, and his son; Dr. Eduardo Liceaga and his son Fernando Liceaga; Drs. Rafael Lavista, José Ramos, J. Ignacio Capetillo, Manuel Gutierrez, J. M. Bandera, Tejeda Hurtado, Porfirio Parra, E. Montano, Francisco Chacon, Toussaint D. Orvananos, Regino Gonzales, Tobias Nunez, Nicolas Ramirez de Arellano and Tomas Noriega, secretary of the school.

My paper was the first that was read in the Section on Obstetrics, Gynecology and Abdominal Surgery. The next paper was on "Uterine Fibroids Complicated with Pregnancy, with Report of Cases," by A. Vander Veer, Albany, N. Y. He said that some forms of fibroids, such as the subperitoneal, pedunculated or sessile, often give but little trouble on the occurrence of pregnancy, but the chief danger occurs in those cases in which the growth extends into the uterine cavity or obstructs the outlet of the pelvis. Myomectomy in the interest of the child for cases in which dystocia would in all likelihood occur, offers a means for relief; near the close of the term, when dystocia is imminent, suprapubic hysterectomy he regarded as the safest operation to undertake. In such cases the loss of the mothers may not be expected to exceed 10 per cent. and that of the children to be nearly *nil*. Dr. Vander Veer's remarks had reference to the larger fibroids that were often liable to take on what is denominated cystic degeneration. In many such cases he advised removal of the appendages in preference to resorting at a later date to a Cæsarean operation.

"Dystocia in Women of Mexico," by J. Ignacio Capetillo, Professor of Clinical Obstetrics in the School of Medicine of Mexico, was the title of a paper read before the Section. Dystocia, he divided into three classes, maternal, fetal and ovular. The cases of maternal dystocia arise mostly from the bad direction of the axis of the uterus; it may arise from the

vicious conformation of the vertebral column and of the promontory of the sacrum, or from a peculiar conformation of the pelvis of Mexican women; these may be considered as a *modalitis*, as he termed them, and not as a defect in conformation. Dystocia from narrowed pelvis due to rickets and from osteomalacia, is extremely rare. Dystocia in the third period of labor is sometimes caused in the native Indian women in consequence of the shortness of their perineum and smallness of their vulva, as compared with those parts in the Spanish-European women. This he attributed to habits of life pursued by the native female, since these women are accustomed to occupy for unusually long continuous periods of time a squatting position while making use of the *metalpile* and the metate in grinding beans, corn, or other cereals. In accomplishing these tasks, the hands, the arms and the lower portions of the trunk of the body are put to the severest test.

"Treatment of Puerperal Infection," was the subject of a paper by Dr. Manuel Barreiro, one of the leading secretaries of the Section and the chief of the clinic of the Maternity Hospital of Mexico. His paper showed that the Mexicans were thoroughly up in all that pertains to modern methods for the management of obstetric cases. He regarded placental fragments as the chief cause of infection. He said that the objections brought forward against curettage were of no value; that cases occurred in which he resorted to it two and even three times before full relief was obtained. For antiseptics he had used the tincture of iodin and the bichlorid of mercury. Strychnia, hypodermatically, for loss of blood and for cardiac exhaustion was had recourse to. A visit to the Maternity Hospital showed that all its appointments were well carried out.

A paper embracing the statistics from the Maternity Hospital of Puebla, from Oct. 1, 1894, to Sept. 30, 1896, by Dr. José Maria de Ita, brought out the fact that only one-half of one per cent. in the mortality, and the almost extinction of puerperal accidents even in the management of very difficult cases, had been the outcome since the adoption of the use of antiseptics. Bichlorid of mercury was the sheet anchor. By a strict methodical use of these means the occurrence of blennorrhagia neonatorum was almost entirely prevented.

Time will not allow me to give a synopsis of the many interesting papers offered in the Section; they were largely representative and elicited a marked degree of attention. The paper on "Penetrating Wounds in the Abdomen," by Dr. Santos Madina, Juchipila, Zacatecas, Mexico, gave evidence that it had been prepared with much care and that the writer was not unacquainted with the details of abdominal work. "A Contribution to Abdominal Surgery," by Dr. Alfonso Ortiz, Alamos, Sonora, Mexico, presented several important features for consideration. Among other things, he said that a simple abdominal incision benefits or cures radically many inflammatory processes of the peritoneum, by the same unknown mechanism which cures a painful and irritable cystitis by cystotomy, an iritis by iridectomy, an incipient glaucoma by De Graefe's classic section; in the same manner that cerebral troubles of epileptiform character are relieved by means of a trephining, and as very serious otologic accidents disappear as if by charm after making the puncture of the tympanic membrane.

The paper on "Intestinal Obstruction," by Dr. George W. Woods, Director of the Marine Medical Department of the United States, Mare Island, Cal., would lead one to believe that there is but comparatively small danger attending an exploratory celiotomy when a perfect operative technique, anesthesia and antiseptics are employed.

A paper on "Intestinal Anastomosis" was read by Dr. Jacob Frank of Chicago. Before reading his paper he was accorded, through the courtesy of Professor Lavista, an opportunity to try or repeat his experiment at the San Andrés Hospital upon a large dog. After etherizing the animal he resected four inches of the intestine and united the divided ends by means of a bone button connected with a piece of rubber drainage tube. Within forty-eight hours the dog was killed; union by anastomosis was observed to be taking place. Dr. Frank favored me with an opportunity to witness some of his work and explained to me many of the details of his method.

All discussion of papers was carried on with great dignity and courtesy. An original feature in the management of the meeting was that after an author had read his paper and it had been discussed he was invited to sit at the president's table and to take part in the conducting of the discussion of other papers that were to follow. This measure of proceeding with the work allowed the chairman an opportunity to arrange other matters for the interest of the Section, and afforded members a special opportunity to become better acquainted with one another. The greater part of the papers were in Spanish, but in a number of instances extracts were printed in English. The précis of all papers would have been published in the same language had the contributors furnished the organizing committee in season with sufficient data for so doing.

Our Section was extremely fortunate in having for one of its executive members Dr. Gustave Pagenstecher of San Luis Potosi. This gentleman had long been a pupil of Sänger of Leipzig; he was not only a good German and Spanish scholar, but he had acquired a most remarkable proficiency in speaking and writing English. Of any paper which was read in the Section he was able to give without delay a good abstract, in either Spanish or English, as was necessary. Dr. Pagenstecher is, indeed, a most successful interpreter in this line of work. I was fortunate in making an early acquaintance with him and we spent many pleasant hours together.

Other Sections of the Congress were well attended; their management and the papers read before them compare favorably with work done in other great medical gatherings.

The general hospital, San Andrés, situated on Calle San Andrés, is a well conducted institution. I had an opportunity of witnessing several important operations performed there. One operation by Professor Lavista was a tracheotomy in the case of a man suffering from dyspnea, due to secondary syphilitic infection. Another was the removal of a large malignant growth from the face. Some of the wards, however, of the hospital are located in the basement where the ancient flooring of stone still remains.

There are in the City of Mexico three other large general hospitals, beside several devoted to the treatment of special classes of cases, both medical and surgical. Of late there has been founded a Pathologic Anatomy Museum. This has been extended so as to embrace sections in bacteriology and bacteriologic

chemistry. The work is designed to be carried on in connection with the instruction given in the Medical University of Mexico. In this line of investigation the Mexicans are fast rivaling the great medical centers of Europe.

The Concepcion Beistegui Hospital, the Regina Nunnery, opened in 1886, is now a flourishing institution. It is the gift of Miss Beistegui, whose father was a native of Aragon, Spain, and whose mother, Donna Paula Garcia, was a native of Guanajuato, Mexico. Its medical department is under the directorship of the head physician, Dr. Joaquin Vertis, with whom are associated Drs. Ismael Prieto, J. Ramón Icasa and Francisco P. Chacón. It is opened for both males and females and for cases, whether medical or surgical. Since its establishment, over four thousand important cases have received attention. All its departments appear to be well conducted; cases of pelvic and abdominal diseases are attended to in the most modern fashion.

The Hospital de Jesús, on Calle de Jesús, was founded by Cortez, 1531. It has within a stone sarcophagus, and is still supported by descendants of the conqueror.

On our return, while stopping at San Luis Potosi, we visited the large military hospital of that place, also the children's hospital. Great attention is devoted to the sanitary matters and to the feeding and nursing of the children.

Mexico is carrying on a great deal of work in the endeavor to prevent disease. The Supreme Board of Health has instituted many measures of reform. The work undertaken by Pasteur is being recognized throughout the republic, and experiments on a large scale for rendering immunity against rabies and hydrophobia are daily performed. I saw a number of rabbits operated upon, à la Pasteur, at the laboratory connected with the Supreme Board of Health.

We took occasion early one morning to visit the American Hospital, which is situated on a short avenue just off Calle de Rivera de San Cosme; this street is a continuation of Calles San Andrés, Mariscala, San Juan de Divos, San Diégo, San Hipólito, Puente de Alvarado and Buena Vista. Before stopping at the hospital we visited the United States National Cemetery, which was in charge of Comrade John Ayers of the G. A. R. In the cemetery has been erected a monument to the memory of our gallant and brave soldiers who had fallen in our war against Mexico. The cemetery is on the left as we went westward on Calle de Cosme. The fence on the westerly side of the cemetery abuts close to the Nochistongo, as already described. The cemetery, on its easterly side, is bounded by the ancient road leading around to the Castle of Chapultepec. It was on this road that Cortez spent that dismal night (noche triste), July 1, 1520, when the Spanish soldiers under him were so terribly slaughtered in their flight before the pursuing Aztecs. The giant cypress tree (el arbol de noche triste) under which Cortez wept is still standing. It was over the moat, then filled with dead and dying soldiers that, "Alvarado, like Ney, the last to retreat," saved himself by a most wonderful leap, and found Cortez, who had halted at Tacuba, and was saved from utter destruction only by reason of the darkness of the night. The venerable tree is now inclosed by an iron railing, and on the stone memorial erected is inscribed the story of that dismal night.

The American Hospital is supported by contributions not only from Americans, but from Germans, French and people of other nationalities. Dr. Bray, an American physician in charge, received us in a most agreeable manner; the matron, Mrs. Netteberg, and her daughter ushered us into the dining room, where had been prepared for us and a few other Americans a most bountiful breakfast. We were accompanied to the wards and other rooms of the various buildings and were shown in what manner the sick and disabled were cared for. The operating room was found to be well lighted and furnished with many modern conveniences; instruments were in glass cases; basins, bowls and other articles for use were made after the most improved style. Abundant means for sterilizing instruments and dressings were at hand. Most of the instruments had recently been brought from Paris. The rooms were light, cheerful and the surroundings bore evidence of the display of good taste; the different buildings had a striking resemblance to the Roman villas.

While visiting Tampico, on the Gulf Coast, I noticed that meat when exposed even for a long time to the sun's hot rays did not spoil but became only dry and hard. This immunity from decomposition there, as in other parts of Mexico, I am told is due to the absence of bacteria. The infrequent rains, the cloudless skies and the stillness of the air are unfavorable conditions for the spread or development of microörganisms.

Monterey, on the Gulf and Monterey Railway, is worthy of some degree of attention from the tourist. It has become Americanized to some extent. We visited the heights on which the Bishop's Palace is situated and the fields where were fought the battles between the Americans and Mexicans, 1846–48; there we picked up some bullets and other relics that had been overlooked by previous visitors.

It should be said that the final entertainment to the members of the Congress was an excursion to the Pyramids of San Juan Teotihuacan, about twenty-seven miles from the City of Mexico. At San Juan we were met by two bands of music, a troop of cavalry and the Rurales. Horses and carriages were in waiting sufficient for the comfortable accommodation of all. The party was first taken to the remains of a pre-historic Mexican house, thence to the pyramids. There are two of the larger variety, one of the Sun and the other of the Moon. The Pyramid of the Sun compares in size not unfavorably with Cheops. In the neighborhood of these are a great many tumuli, isolated and grouped. The opinion of archeologists in regard to these very curious remains, chiefly based upon the wide divergence from any known types of the clay masks found in what may be assumed to be the older of the tombs, is that they are the work of a race older than either the Toltecs or Acolhuas, of which only these monuments now remain. After inspecting the pyramids a bountiful repast was supplied by the Governor of the State, Gen. José Vicente Villada. Mr. Leopoldo Batres, conservator of the public monuments, advanced to us the theory that they had been used for places of worship, not of war, although there were those present who imagined that they might have been used as watch-towers in order to give notice of invasions that might take place from nomadic tribes of the hills. He called attention also to the resemblance that these mounds have to those of Egypt, and thought that they were coeval if not previous. They were, he said, indelible traces of an

undoubtedly high state of civilization on the part of the builders.

The Valley of Mexico is a basin of about seventy miles in length and forty-five miles in width. It extends from Pachuca on the northeast to the mountains south of Lake Chalco, and from the Sierra Nevada range on the east to the Sierra de los Cruces range on the west. The valley has an area of 1,750 square miles, or is about one-fourth greater than the State of Rhode Island. In the northern half are three small lakes and scores of small villages, but no large towns except Pachuca; in the southern half are three large lakes, many large villages and the City of Mexico. The lowest portion of the basin is Lake Texcoco, which in its normal condition is only six feet below the level of the city. The bottom of the valley has an elevation of 7,400 feet, while the highest point on the sides is about 17,777 feet above the level of the sea. We enter the northern half of the valley through the Cut of Nochistongo, and the southern half through an opening on the western side of Sierra Guadalupe.

In this valley we are in the earliest home of man on this continent. The Chichimecs settled there in A. D. 635, a hundred years after the Toltecs came, and these were succeeded by the Aztecs in A. D. 890. Their name for the region was Anahuac, signifying "the place of waters."

Beside Texcoco, there are five other lakes in the valley. Lake Zumpango is the highest in the valley and is east of the cut. The River Cuatitlan emptied into the Zumpango, but the cut was made so as to turn the river's course into the Tula River. The new canal carries the water of the valley into the Ravine of Tequixquiac before entering the Tula River.

Zumpango is thirty miles north of Mexico City; Xaltocan and Zumpango are at an elevation of twenty-five feet above the city. San Cristobal is a small lake immediately north of Texcoco, twelve miles N.N.E. of Mexico and is ten miles long. Chalco and Xochimilco are the southernmost, whose levels are ten feet above Texcoco. The largest and nearest is but six feet below the pavement of the city at ordinary stages of the water. Texcoco is a salt-water lake two and one-quarter miles east of the City of Mexico, with which it is connected by a canal; its greatest length from north to south is about fifteen miles, its greatest width nine miles. Its depth nowhere exceeds ten feet, and in some parts is not more than two or three feet, while its shores are swampy. The lake is said to have been much more extensive than at present and to have included several islands, on which the Mexico of the Incas was built. Lake Texcoco is without any natural outlet.

I should say that there were presented in the Section on Anatomy, including Physiology, two papers of unusual interest. One of these was on "Hematology of High Altitudes," by Dr. Galdino Casillas, Guadalajara, Mexico. He said that "the increase of red blood corpuscles in the system in elevated climates is real and not fictitious," that is, that the condition of the system in elevated regions is not a "physiologic concentration of blood discs from a loss of water."

The other of these papers was on "Anatomic and Physiologic Modifications Due to the Elevation," by Dr. Daniel Vergara Lope together with Prof. Alfonso L. Herrera of Mexico. They referred to the "increase of the biachromeal distance, of the length of the sternum, of the clavicular widening of the thorax and the increase of the pulmonary capacity." Those authors referred to the relation of the thorax to the height, and to several other vital conditions that obtain in the organism of those who dwell in high altitudes. The summary was that man can become completely acclimated to elevated centers. His humors are concentrated, his respiration and circulation are accelerated and the decrease of oxygen is compensated for by the increased activity of the hematosis. These facts, they said, ought to be borne in mind by the physician who is established in high altitudes. If these conclusions are correct, may not the varying degrees of the stature of individuals be dependent in large measure upon the degrees of altitude to which the progenitors during a long course of ages have been subjected?

APPENDICITIS, WITH REPORT OF AN INTERESTING CASE.

Read before the Section on Abdominal Surgery, Obstetrics and Gynecology, Second Pan-American Medical Congress, Mexico City, Mexico, Nov. 18, 1896.

BY HENRY L. E. JOHNSON, M.D.

A Vice-President of the Second Pan-American Medical Congress; late President of the Clinico-Pathological Society; late Vice-President of the Washington Obstetrical and Gynecological Society; Professor of Gynecology in the Medical Department of the Columbian University; Professor of Gynecology in the Post-Graduate School of Medicine of the District of Columbia; Director of the Gynecologic Clinic in the Central Dispensary and Emergency Hospital; Consultant to the Woman's Clinic, etc.

WASHINGTON, D. C.

I have the pleasure, Mr. President and fellow members, of presenting for your consideration and criticism a few remarks and observations on appendicitis, the disease which is attracting so much attention at the present time, and which is possibly not thoroughly understood by the medical profession of the day. The disease is one of frequent occurrence, and its mortality is in direct ratio to the accuracy of diagnosis and treatment.

Nomenclature.—The disease is and has been variously known as iliac phlegmon, typhlitis, perityphlitis, paratyphlitis, cecitis, pericecitis, paracecitis, periappendicitis, ecphyaditis and appendicitis.

History.—M. Mastivier, in *Journal of Medicine, Surgery and Pharmacy*, Paris, May, 1759, reports the case of a man aged 45, with a large tumor in the right side near the umbilicus, who presented himself for treatment at the Hospital of St. Andrew of Bordeaux in the year 1757. Operation: evacuation of about a pint of offensive pus; postmortem showed a gangrenous cecum and appendix, the latter containing a large corroded and encrusted pin.

Early in the present century "Phlegmons in the Right Iliac Fossa" were extensively written about, without, however, attributing the same to the appendix. In 1831 Farrall published a paper on "Phlegmonous Tumor in the Right Iliac Region," in which the cecum is set down as the cause of the disease. In 1833 Dupuytren gave expression to the same views. In 1834 Copeland recognized the appendix as a possible factor, but quite secondary to the cecum. In 1837 the ulceration of the appendix from foreign bodies is spoken of as a matter of little consequence so long as confined to the mucous membrane, but causing abscesses when the peritoneum is involved. Hancock operated on one case in 1848. In 1867 Willard Parker of New York favors an early operation. From this time on, the theory of the cecum diminished and that

of the appendix increased. In 1880 Woirth of Copenhagen expressed his disbelief in the cecal theory. In 1883 Dr. F. F. Noyes reports 100 cases, of which 90 per cent. were operated upon in America. In 1886, Fitz of Boston put on record 209 cases.

Etiology.—Appendicitis is more frequent in males than in females. The disease is most common between the ages of 10 and 20. Fifteen per cent. of all cases occur in people under 15 years of age. Among the anatomic causes which predispose to inflammation of the appendix, the blood supply forms an important part, there being only one artery supplying the organ, and that forming no anastomosis. The richness of the lymphatic tissue which is found in the appendix plays an important part. Finally, it is claimed that its position favors inflammation.

Predisposing causes.—Intestinal catarrh and indigestion; distension of bowel with chronic constipation.

Exciting causes.—The usual causes assigned are the lodging of foreign bodies, fecal concretions, microorganisms and acute intestinal indigestion from imprudence in diet.

Varieties and pathology.—Various forms of the disease are recognized by different authors, the principal ones are catarrhal, ulcerative, infective and recurrent appendicitis, and the following seems to be the usually recognized pathology:

Catarrhal.—The exact frequency of this form, when mild, can not be determined. It probably produces no symptoms and may subside without leaving a trace. Chronic catarrh is, however, frequently found on postmortem examinations and is easily recognized, as it gives a thickening to the wall. The actual changes are those of mucous membranes elsewhere. There occurs a rapid shedding of the epithelium with detachment and extrusion of the epithelial lining of the crypts of Lieberkühn. The base of the mucous membrane is infiltrated by leucocytes, and the crypts are obliterated. The lumen is found to contain an abundance of leucocytes, granular débris, mucus and casts of the interior of the crypts, and the whole is sometimes molded into a definite central mass by the muscular movements of the tube. Perfect recovery by a new growth of epithelium is at first possible, but the shedding may be so complete and over so large an area that the denuded surface can not be covered anew. The inner part of the mucous surface now comes to consist of granulation tissue. This condition happily acts often as a preventive of further attacks, as by pressure of the surrounding parts the two surfaces grow together, with obliteration of the lumen of the tube, or again fibrous tissue may obliterate the cavity, and a natural cure results. The process may be confined to only a part of the tube, in which case there will be a stricture, usually near the cecal ends. The remaining portion sometimes is largest, forming a cyst. In many cases the condition becomes chronic with great thickening of the wall, as much as one-eighth to one-tenth of an inch in some instances, rendering the appendix firm and rigid.

Ulcerative.—This form is not preceded by a general catarrh. The ulceration is due to fecal concretions or foreign bodies. Feces press on the wall and injure the epithelium, which is ulcerated and finally destroyed. The mucous membrane, submucous tissue and finally the muscular coats disappear. In twenty-seven fatal cases (St. Thomas' Hospital) fecal concretions were found in eleven. Fitz (Boston), in 152 cases found them in 47 per cent. Mathews in 63 per cent. of 169 cases.

Infective.—This form of appendicitis may result from either one of the preceding, or may have an independent origin. It seems to be associated with bacterial invasion of the tissues of appendix wall, and in all cases leads to a virulent peritonitis. The bacillus usually most active is the coli communis.

Recurrent appendicitis.—This form is prominently known but quite recently. Treves has reported a case in which there were fourteen attacks, and McBurney reports one in which twelve attacks occurred within as many months. Krafft states that of 106 cases which he studied, 23 per cent. had been previously affected.

The writer reports herein one case in which five relapses occurred within twelve months. Operation was successfully performed during the fifth attack.

The writer believes that all cases originate in a catarrh or inflammation resulting from torsion, or volvulus of the tube or from fecal or other concretions, all producing greater or less ulceration, with sometimes perforation and subsequent bacillus infection of the appendix and adjacent tissues. The rapidity and quantity of pus formation is familiar to all surgeons, two or three pints having been known to form in some cases by the fifth day of the disease. The writer believes the process in the appendix follows a similar course with the Fallopian tubes, viz., inflammation with contractions, puckerings, obstruction and fluid accumulation with in some cases resolution, and in others the formation of an infected pus cavity, which bursts or perforates and on the one hand results in general peritoneal infection, or by adhesive limitation, forms a circumscribed abscess or abscesses. Sometimes the appendix is found diseased and even gangrenous and without adhesions. In other instances the appendix is almost disorganized and is surrounded by pus and quite free from adhesions. The writer has seen such a case recently in consultation in which the appendix was removed and the patient recovered. The adhesions and torsions of the appendix so often observed in abdominal sections in gynecologic practice, may sooner or later be a factor in the causation of this disease.

Previous attacks of appendicitis which appear to have undergone resolution, predispose to subsequent attacks of greater or less gravity. Perforation with septic infection of the peritoneum and death may result very early in the attack. Matterstock found perforation in 132 out of 146 cases, while Fenwick found it to exist in 113 out of 130 cases. Accurate pathology will be obtained only by early and frequent operations and careful laboratory study of specimens.

Symptomatology.—The symptoms are usually severe and very pronounced. Pain, sudden and severe, is the first symptom noted. It is not always in the right iliac region, though at the end of twenty-four hours it usually becomes most prominent there. There is usually headache, sometimes a chill. Vomiting may or may not be an urgent symptom. The initial temperature usually ranges from 100 to 104 degrees, with a tendency to fall within two or three days. Sometimes the temperature is low and not in proportion to the other symptoms. The pulse is usually rapid, sometimes intermittent. Tenderness on pressure in right iliac region, with marked tension or rigidity of abdominal muscles over the right iliac region is almost pathognomonic. In 1889 McBurney first drew attention to a spot at which on deep pressure pain was

always elicited. This spot is situated at from one and one-half to two inches from the anterior superior spine of the right ilium along a line drawn from that process to the umbilicus. Constipation is usually marked at first, but may be preceded by two or three loose movements. Abdominal distention is usually marked for the first day or two. Increasing distention is a bad symptom. The pain is later increased upon motion or coughing, and there is a tendency to flexion of the right thigh or drawing the leg up to the body. The patient is most comfortable when lying upon the back. There is usually a tumor in the right iliac region of varying size, which is detected from the first to the third day. It consists of the appendix, intestines, omentum and exudate, and usually increases in size as the disease progresses. Exaggeration or increasing intensity of pain, accompanied by symptoms of shock, with the disappearance of tumor, followed by chill, fever, tympanites and vomiting, indicate usually rupture into the peritoneal cavity. These symptoms to a less degree, however, may indicate the formation of pus without perforation or perforation into the bowel. Prostration may or may not be a prominent symptom. The condition of the urine is usually negative, but sometimes contains albumin. There is usually marked loss of appetite with increased thirst. There are, sometimes, prodromal symptoms manifested for a few days, consisting of abdominal uneasiness and soreness with some distention and flatulence. These may often be discovered to have existed without attracting the patient's attention particularly.

Diagnosis.—The diagnosis is based upon the history of the case, the physical signs and the symptoms above mentioned.

Differentiation. — Appendicitis must be differentiated from renal and hepatic colic, acute indigestion, cholera morbus, strangulated inguinal hernia, torsion and volvulus and obstruction of bowels, and the various acute pelvic diseases in women.

Termination and Prognosis. — Fitz says that 26 per cent. and Stimson that 25 per cent. of all cases of appendicitis prove fatal. According to Fitz, 60 out of 176 cases of perforated appendicitis died during the first five days, 56 during the first four days, 28 during the first three days, and 8 during the second day, though a large number of cases of simple appendicitis are said to terminate favorably by resolution. Bull, in 1894, placed the mortality at 5 to 6 per cent., although he had collected 450 cases with only 8 deaths. Deaver collected 200 cases with only 2 deaths. Robert T. Morris records the mortality as 15 per cent. under medical treatment, with an addition of 10 per cent. from numerous chronic complications resulting from previous acute attacks. The prognosis is consequently grave and will depend upon early diagnosis and prompt modern surgical interference.

Treatment.—The majority of writers concur in the opinion that there is no reliable medicinal treatment for appendicitis. Osler says ("Principles of Medicine," 1895): "There is no medicinal treatment for appendicitis. Operation is indicated for acute inflammatory trouble in cecal region whether a tumor is present or not, and when by the third day the features of the case point to a progressive lesion." The case once accurately diagnosticated, most writers agree that the operation should be done at once. In cases of recurring appendicitis the operation is performed in the interval, or as soon as the symptoms recur. When the appendix can be found and its removal does not entail the breaking up of adhesions, thereby opening the peritoneal cavity, it is removed in the usual way. When not removed, the case is treated as an abscess cavity, being packed and drained. In this treatment there seems to be a consensus of surgical opinion. Thus Dr. J. D. S. Davis, of Birmingham, Ala., in *Medicine* for February, 1896, says: "To make an extensive search for the appendix is liable to break up adhesions and allow the escape of septic pus into the general cavity. The records of operation upon appendical abscess show that the great majority of cases are cured after evacuation and complete drainage."

Dr. J. B. Deaver (Surgeon to the German Hospital, Philadelphia): "The best results are obtained when the operation is performed at the earliest opportunity."

According to Ribbert 16 out of 400 cases recover without operation. Deaver recommends the removal of the organ in all cases if the operator be a skilful one! Otherwise he simply evacuates the pus and drains the cavity.

"Murray believes the mortality to be 1 per cent. When he finds a walled-in abscess in the inguinal region, the abscess cavity is cleansed with hydrogen peroxid and flushed with hot saline solution, whereupon search may be made for the appendix and multiple abscesses in the vicinity, without the danger of infecting the abdominal cavity when the adhesions are broken down."

G. M. Gray (*Kansas Medical Journal* of December, 1895) "removes the appendix if the operation is done early; if late he opens the cavity and drains. The question of removing the appendix in these cases to be determined by the operator for each individual case."

Dr. J. William White of Philadelphia says: "In a circumscribed abscess it is bad surgery to insist on finding the appendix; should be content with treating as an abscess." He (White) has left the appendix in thirty-seven cases, all of which are living. Dr. White's treatment and teaching is thus supported.

Richardson reports forty cases with the appendix left; perfect recovery in all.

McBurney says, "the appendix is frequently destroyed before the operation." If in such cases indefinitely prolonged search were to be made for the appendix fatal results would be inevitable.

Dr. Bull says: "The plan of always looking for the appendix is fraught with the risk of infecting a healthy peritoneum, and that the mortality from surgical treatment is about 2 per cent. in cases operated upon at a time when the infection is limited to the confines of the appendix."

Dr. Senn states that "persistent search is hazardous." Halstead says the same. Cabot of Boston reports thirty-two operations on thirty-one patients in the interval of the attacks, with no deaths. Hunter McGuire reports seventeen operations with one death from chronic appendicitis.

The writer holds that these cases are not prejudiced unfavorably by early operation, nor is the danger to the patient increased, hence, all cases should be operated upon at once. Even in cases of mistaken diagnosis, operation under thorough aseptic precautions will be attended with no more danger than an exploratory section, and notwithstanding the fact that the appendix is found to be normal it should be removed,

thus preventing a possible future attack of appendicitis. When the appendix is found to be diseased, it should be removed and treated by immediate closure of the abdomen by suture, preferably silkworm gut where pus is not present, and by drainage by gauze packing without drainage tube, where pus is present. In the case of a large abscess or multiple abscesses the correct treatment is drainage, after thorough flushing with saline solution, and no hazardous attempt should be made to secure an appendix which has in all probability sloughed away. Multiple abscesses should be carefully converted into one large cavity and so treated. Should the appendix or a portion of it remain and produce subsequent trouble, a second operation should be performed at once.

In cases where the abdomen is opened for other causes the appendix should always be removed as a prophylactic measure, and the danger from the original operation is not thereby increased, the "pus cases" found in women not excepted. Every attention should be given to secure absolute asepsis both before, during and after operation. The subsequent treatment is that recognized in abdominal surgery. In the case of abscesses the greatest judgment should be exercised in selecting the point for incision, thereby avoiding the danger of opening too near or perforating the exudate boundary of the abscess, thus infecting the general peritoneum.

HISTORY OF AN INTERESTING CASE OF RECURRENT APPENDICITIS, RECOVERY AFTER OPERATION.

Mr. ——, age 37. Previously in excellent health. Had typhoid fever about thirteen years ago and was quite ill, with marked abdominal symptoms, but recovered without complications. Had his first attack of appendicitis on Aug. 2, 1895. The attack was ushered in very much like an attack of colic from indigestion, and followed by acute pain over entire abdomen, with nausea, vomiting and purging. By the next day the general symptoms had more or less subsided and the disorder was clearly defined in the right iliac region. The illness lasted one week and subsided under rest, diet, opiates and enemas. The diagnosis of catarrhal appendicitis was made.

A second attack occurred on Sept. 1, 1895, following the ingestion of a large quantity of pears. The subsequent history was identical with the first attack. A slight induration in the right inguinal region was apparent, but disappeared shortly.

A third attack began on Dec. 30, 1895. This attack was much more marked than the previous attacks, the patient being sick for three weeks. A similar induration appeared by the fifth day but promptly subsided. The temperature in none of these attacks reached 100, and the pulse at no time was above 90. The pulse generally ran along between 72 and 80. On Jan. 5, 1896, following an enema the patient passed a peculiar worm-like gelatinous "string" about twenty-four inches long, which was submitted to Dr. Walter Reed, U. S. A., who made the following report on the specimen:

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE.
WASHINGTON, D. C., Jan. 8, 1896.

Dear Doctor:—The specimen which you left at the Museum on Monday, the 6th inst., and which was said to have been passed from the bowel in a case of appendicitis, has been subjected to microscopic examination and found to consist of fine and coarse fibers of fibrin enclosing many necrotic and feebly staining columnar shaped cells. As far as we are able to judge microscopically I should say that the specimen consists of so-called membranous cast of the intestine.

Very sincerely yours,
WALTER REED, Surgeon U. S. A., Curator.

No hemorrhage followed the passage of this specimen and the symptoms gradually disappeared. The patient was out in three weeks.

During an interval of nine months between the third and fourth attacks, the patient enjoyed excellent health and congratulated himself upon having entirely recovered. The fourth attack occurred suddenly on Sept. 14, 1896, while the patient was preparing to leave the city on an extended tour. The symptoms being somewhat misleading and, but for the history of previous attacks, would not at first have attracted particular attention. A medical friend who was visiting the patient at that time, supposed the attack was one of simple indigestion, and administered a large dose of sulphate of magnesia. The temperature in this attack never rose above 99.4, pulse 72. The patient was considered well in ten days and moved into a new house.

On the 25th the old symptoms showed themselves again and by the 26th they were much more marked. On the 27th the patient had a chill which was not very pronounced, temperature reaching 101 and the pulse 80. Pain in the side became acute and induration with tension of the abdominal muscles in the right inguinal region, was well marked.

Operation was performed on the 28th, at which time the patient felt perfectly well, had no pain or soreness and none was produced by pressure over the inguinal region. The boggy sensation had, however extended, the temperature was 99 and the pulse 72, and the skin moist. The condition of the patient was decidedly misleading. The diagnosis of circumscribed appendical abscess, previously made was adhered to, and an incision resulted in the evacuation of about three quarts of greenish-black offensive pus. A small lump or mass was removed which was supposed to be the remains of the disorganized appendix, but was subsequently lost by the nurse, thus preventing an histologic examination. The abscess walls appeared to be gangrenous.

After an exploration, not endangering the exudate walls, the cavity was thoroughly irrigated with salt solution, and packed with iodoform gauze, which was permitted to remain forty-eight hours. Thorough aseptic precautions were observed in every detail. The patient made an uneventful convalescence, the wound healing promptly by granulation under gauze packing, giving a strong union without hernia.

I believe this case would have been lost through septic infection had an injudicious search been instituted further for an appendix which in all probability had sloughed away, and I re-affirm my opinion that all cases of appendicitis should be promptly operated upon.

On November 3 the patient passed an intestinal cast similar to the one above mentioned. This was submitted to Surgeon Walter Reed, who forwarded the following report.

WAR DEPARTMENT, SURGEON GENERAL'S OFFICE,
WASHINGTON, D.C., Nov. 4, 1896.

Dear Doctor:—Referring to the specimen mentioned in your letter of Nov. 3, 1896, I beg to say that microscopic examination shows it to consist of numerous interlacing fine fibers, enclosing in their meshes a large number of poorly staining cell-nuclei, and considerable granular amorphous material.

I think this specimen should be considered as a part of a membranous cast of the bowel. Sincerely yours,
WALTER REED, Surgeon U. S. A. Curator.

Baby's Turn Next Time.—Mrs. Briske—Johnny, did the doctor call while I was out?

Little Johnny (stopping his play)—Yes'm. He felt my pulse an' looked at my tongue, and shooked his head and said it was a very serious case, and he left this prescription and said he would call again before night.

Mrs. Briske—Gracious me! It wasn't you I sent him to see; it was the baby.—*New York Weekly.*

DIAGNOSIS AND SYMPTOMS OF APPENDICITIS.

Read before the Detroit Medical and Library Society.

BY J. H. CARSTENS, M.D.

Chief of Staff and Gynecologist to Harper Hospital; Professor of Obstetrics and Clinical Gynecology in the Detroit College of Medicine; Ex-President American Association of Obstetricians and Gynecologists, etc.

DETROIT, MICH.

The diagnosis of appendicitis is now generally made without difficulty by the general practitioners. Still sometimes a mistake is made and the diagnosis not easy on account of obscure symptoms.

The first symptom is pain and this varies in location. It is seldom in the region of the appendix at first, but most frequently is referred to the umbilicus. In a smaller number of cases, the pain is first located in the region of the stomach, especially in cases accompanied by vomiting; and in a very small proportion of cases only, is it located by the patient in the region of the appendix. The pain is generally spasmodic, colicky, hence the expression, "appendicular colic." Sometimes, however, the pain is not so sharp and acute, but is dull and constant. Remember, I am referring to the very first symptoms.

In the acute fulminating kind, when the appendix is ruptured and diffuse peritonitis takes place, we get the characteristic pain of the latter disease. Vomiting sometimes ushers in an attack, as the exciting cause often seems to be a full meal of indigestible food. Vomiting, however, is an unreliable symptom. The condition of the bowels also varies; sometimes the vomiting is accompanied with an attack of diarrhea and sometimes constipation exists. Hence, neither the pain, nor the vomiting, nor the diarrhea, nor the constipation are at all pathognomonic of the disease.

If we now consider the temperature and the pulse, it is just the same. Some of the worst cases of appendicitis I have ever seen had only a temperature of 99 or 99.5 degrees, although as a rule, if we see cases early enough, we will find that the first day the temperature will suddenly rise to above 100, sometimes 102 and 103, although most frequently the temperature will gradually rise, the first day to about 100; second day, 101, and the third day, 102. By this time, such an exudation has been thrown around the appendix that the temperature often drops to nearly normal and both the patient and the physician are deluded with the idea that recovery is taking place. I want to call your special attention to this very dangerous condition, because many patients have been lost and an operation delayed on this account. In from twenty-four to forty-eight hours another sudden rise takes place, rupture occurs with diffuse peritonitis, and which is often beyond surgical aid.

The pulse also varies, as the temperature, from 100 to 130 and 140, and I would like to place more reliance on the pulse than anything else, as far as the prognosis is concerned. No matter what the symptoms or the temperature, if the pulse remains between 90 and 100, or even a little more, the danger is very little. But if the pulse runs up to 120, 140, or 160, even with no other serious symptoms, and a temperature of only 99, the patient is in a most critical condition and I think authorities all agree that if there is any doubt about operative procedures, there never is when the pulse goes above 110, no matter how mild the other symptoms may be.

Hence, I would say, that in cases with pain in the abdomen, no matter where located, accompanied with vomiting or not, diarrhea or constipation, a slight elevation of temperature or a great one, with a slow pulse or a rapid one, such cases should be carefully examined for appendicitis. We can easily do that by palpation, carefully going over the whole abdomen and gently locating the greatest point of tenderness. By keeping the patient's mind diverted, we can bear down quite strong on different parts of the abdomen and get the exact location of tenderness. If it is appendicitis, we will nearly always find it at the so-called McBurney point, which is a spot midway between the umbilicus and the anterior superior spine of the ilium. But many cases vary, as the location of the appendix varies. The appendix sometimes reaches over to the left side and is attached there, or reaches downward and is attached; sometimes it reaches upward toward the liver, and the point of attachment of the appendix is generally where the pain exists.

I operated upon a case some time ago, where the pain was located just above the symphysis, and still it was so well marked that I had no doubt about the diagnosis. I found that the point of the appendix was attached to the anterior wall of the abdomen, just about the symphysis, and had become perforated. The patient recovered. We can sometimes palpate the appendix, as in acute cases an exudate is thrown around it, and we will feel quite a swelling in the right inguinal region. But in so many cases the appendix lies behind the cecum, the cecum is filled with gas, and it is absolutely impossible to do so.

Beside, the other great pathognomonic symptom of the disease is muscular rigidity over the region of the cecum, which makes it impossible for any one to map out anything unless the patient is under the influence of an anesthetic. In a few rare obscure cases of appendicitis which have come under my observation, where I had absolutely no history, I could only diagnose the case by placing the patient under the influence of chloroform and then find deep down the exudate.

Appendicitis might be mistaken for typhoid fever; in fact, I have seen quite a few cases of relapsing appendicitis which had been treated for weeks and months for typhoid fever, which simply shows a very superficial examination of the patient on the part of the attending physician.

In women, the inflammation of the right Fallopian tube has frequently been mistaken for appendicitis and vice versa. A careful digital conjoined examination should clear up a diagnosis, but there must always remain a certain number of cases where the Fallopian tube is adherent high up, and where it is impossible to make the diagnosis. There are also a certain number of cases where both diseases exist at the same time, the one exciting the other.

A few months ago, I saw a beautiful case of tubercular appendicitis, the same condition existing in the right tube, and where I moved both through the same opening.

Invagination and intussusception of the intestines may sometimes be mistaken for appendicitis. By carefully examining the case generally no trouble will exist. Often in my experience, a diagnosis of intestinal obstruction has been made when it was a case of appendicitis, and the intestinal obstruction was only one of the symptoms. Still, in the last few weeks, I saw a case of appendicitis which had been operated upon a year ago by simple incision and letting out the pus, but not removing the appendix; the man had a

recurring attack and a well-marked tumor, and there was no question at all about the diagnosis. I cut down and found an immense hollow tube, which I thought was the largest appendix I had ever seen. But I was not quite satisfied. It seemed to have curled upon itself, and after loosening the adhesions and bringing the mass to view, I found that a small loop of intestine, near the junction of the cecum, was encircled by a small fibrinous band which absolutely occluded it and had produced gangrene, so that I was obliged to resect twelve inches of intestines and insert a Murphy button. Unfortunately, the patient died, but it was as typical a case of appendicitis as I had ever seen, with forty-eight hours duration only, and I challenge anybody to have diagnosed anything different.

Extra-uterine pregnancy may simulate appendicitis, but the hemorrhage, the collapse and the progressively weakening pulse, with a bi-manual examination will clear up the case. Painful menstruation, with other pelvic disorders, sometimes simulates appendicitis. A floating kidney with twisting of the ureter, producing nephritic colic, as well as pyo-nephrosis, renal calculi, tumors, etc., of the kidneys, on account of their location, should seldom be mistaken for the disease under consideration. Gallstones and rupture of the gall bladder can be easily mistaken for appendicitis, but by carefully examining the location of the trouble, mistakes should seldom be made. However, both require operative procedures, and by making an incision high up both the region of the appendix and that of the gall bladder can be easily explored, a diagnosis readily made and the incision increased upward or downward, as indicated. The muscular rigidity of the gall bladder troubles is found in the upper part of the abdominal muscles more than in those over the cecum. That very rare condition of an abscess in the abdominal walls may sometimes lead the diagnostician astray, but the superficial swelling, the lack of deep seated abdominal pain, will clear up the diagnosis. Tubercular peritonitis, involving the right ovary and tube, or primarily the appendix, often simulates a chronic or relapsing variety of appendicitis. But a surgical treatment is indicated in either of them and no time need be wasted in making a differential diagnosis.

To cut it short, all these different conditions mentioned above should be borne in mind, but appendicitis should always be looked for, when there is pain at the so-called McBurney point with rigidity of the abdominal muscles, some fever, however slight, and an increased pulse-rate, then there is hardly any question about the diagnosis.

CONCLUSIONS.

1. In every case of acute pain in the abdomen look for appendicitis.
2. Especially look for inflamed appendix when the pain is in the right side.
3. In every case of renal calculi, gallstones, right pus-tube and typhoid fever, look again and be sure.

TETANUS ANTITOXIN—REPORT OF CASE.

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DES MOINES, IOWA.

One by one the diseases which have hitherto defied the skill of physicians are yielding to the persistent attack of modern science. Since the successful treatment of diphtheria by subcutaneous injections of antitoxin serum was demonstrated, it has been confidently predicted that sooner or later all diseases resulting from the action of a poison secreted in the blood by a special and characteristic bacillus would be conquered by similar means. Tetanus has its characteristic microbe, which has been recognized, isolated, described and reproduced by artificial culture. The distinguishing symptom of tetanus is a persistent spasmodic spasm of the voluntary muscles aggravated by light, noise, or other disturbing influences to which the patient may be subjected. These spasms may affect any muscular portion of the body, but when, as is often the case, the maxillary muscles are principally involved, the result of the malady is usually known as "lockjaw."

I was called Dec. 20, 1896, at 8 o'clock P.M., to No. 1545 20th St., Des Moines, to see John Wilburg, age 46, who was suffering with, as they supposed, neuralgia of the head and neck. I proceeded at once to get the history of the case, as well as that of the patient, and found that he was of German descent, and had never been sick in his life, so far as he knew, save an injury or two received a few years ago, from which he had entirely recovered; but aside from this, had always enjoyed the best of health. He was married and had four healthy children, and from his story I could find no cause for the supposed neuralgia of the head, except exposure a few days previous. However, upon further inquiry I ascertained that upon December 10, he let a brick fall, striking upon the great toe of the left foot, producing a discoloration of a portion of the nail and a slight abrasion of the skin on the dorsal portion of the same toe, which did not give him much pain at the time, and caused no inconvenience in the future, and he continued his work the same as before, not thinking the injury sufficient to give it any attention whatever; but, upon the following Saturday, December 18, he fell from the roof of his barn, a distance of about twelve feet, resulting simply in a general "shake-up," without any injury whatever and even this did not prevent him from continuing his avocation as before. Upon close inquiry I succeeded in eliciting the fact that he had been having a stiffness about the neck and difficult deglutition for two or three days past, a fact that he did not think worthy of attention and simply, in his opinion, was the result of exposure incident to his vocation, that of hauling brick, but, in reality, in my opinion, was the beginning of what ultimately proved to be the end.

Upon a closer examination of the patient, I found a pulse of 120 and a temperature of 102, with spasmodic pains, the body assuming the position of opisthotonos, no part touching the bed, except the heels and head, the arch being that of nearly a semi-circle, producing typical tetanic spasms, spastic masseters, with trismus, diminution of the visual angle, and apparent permanent spastic contraction of orbicularis palpebrarum muscle, with difficult deglutition and irregular respiration. The pain was not constant, but came periodically and with it the spasm incident to tetanus. I informed the family that, in my opinion, the case was one of tetanus, or lockjaw, caused by the injury to the great toe, December 10, which very much surprised them and their friends because it seemed that they had heard or knew enough of the disease to know what it meant. I gave him nerve sedatives and anodynes for the night and called the next morning,

December 21, at 8.30. Found no material change in the patient from the evening before, save that the respirations were made with more difficulty and the temperature 101 and the pulse 140. I realized the severity of the disease and, also, that in reality the beginning of the first symptoms of the disease could be dated as far back as Friday December 18, so that there has been three and a half days elapsed since that time. I advised the family to have consultation and Dr. Lewis Schooler was called, and confirmed my diagnosis, and was of the same opinion as myself, that if anything would stop the ravages of the disease, it would be tetanus serum, and we even doubted the effectiveness of this treatment on account of the lateness of its beginning, there having been almost four days transpired since the introduction of the disease. I secured forty cubic centimeters of tetanus antitoxin or serum and at 4.30 P.M. gave subcutaneously four cubic centimeters, but not without first giving the patient chloroform inhalation to quiet the spasms produced by any noise or touching of the patient.

Perhaps it would not be out of place here to state that in using the serum I asepticized the field of operation, as well as the Mulford syringe used, and was careful to not permit any air to enter the syringe or serum and, after using, covered the surface with aseptic gauze, retained with adhesive straps. At this time, the spasms were occuring seventy-five per hour when the patient was not under the influence of chloroform. I had taken the precaution to have the patient's bowels to move freely, after which gave food or cod liver oil, beef tea and egg per enema every six hours, and when the patient was unable to retain food given in this way, I resorted to feeding by means of absorption of olive oil and quinin, administered through the medium of a saturated cloth around the body, covered with oiled silk, as deglutition was impossible without aggravating the spasms, and the teeth being firmly set. Realizing that whatever effect I got from the serum would not be instantaneous, I gave hypodermic one-fiftieth grain physostigmin, with a half grain of morphin hypodermically, which was repeated every three hours, or as much oftener as necessary to control the spasms and produce some sleep.

December 22, at 8.30 P.M., I called and found no material change in the patient from the preceding evening, save the spasms were not quite so frequent, a fact which I accredited to the persistent use of the physostigmin. I gave at this time six cubic centimeters of tetanus serum, and in four hours, ten more, making twenty that had been given up to this time. After the last injection given of the serum the patient remarked: "My jaws feel more limber and my neck not so stiff." Believing that I was getting some results from the use of the serum, I determined to push it and secured another bottle of serum containing twenty cubic centimeters, and gave it in two administrations six hours apart, during and after which the patient seemed to be convalescing; the spasms now, instead of being seventy-five were not more than ten per hour, and even then not anything like so severe and we felt that there was some hope; but there being a question in my mind as to the advisability of using more serum and not being able to secure it even if I did, it was all that the case was given, and the patient seemed to be improving slowly with normal temperature and pulse of a 100 and respiration of 30, but somewhat irregular, due to the spasms. This condition of affairs continued without any marked variation until Thursday morning, December 24, when there was a turn for the worse and the spasms were increasing in number and severity and the outlook was anything but favorable. I am satisfied that had I had forty cubic centimeters more of serum at my command, I should have made use of it. This, however, I did not have and all that was left to be done was to quiet the spasms with inhalations of chloroform and anti-spasmodics, which I did until the end came at 2 o'clock A.M., December 26.

My experience with tetanus serum in this case has been sufficient to convince me, beyond a doubt, that when it is used aseptically, plentifully and timely, we may expect good results from it, because in this case, even after four days had elapsed from the onset of the disease, the result from its use while being used and for a limited time afterward was entirely satisfactory and the result so marked that even the family and friends noticed the marked improvement in the case; the respirations were better, the deglutition became possible, but in a limited degree, and the heart's action was better and continued to be so, and the patient's intellect seemed to be improved; hence, I have no hesitancy in saying that there is a field of usefulness for tetanus serum in this dreadful malady and no physician should hesitate to give it a trial upon the least provocation. The experience that I have had with tetanus has fully aroused me to the importance of prompt and immediate action, and, in all cases where there is any danger of this malady, and whenever there is an injury to any part of the body that is liable to produce it, shall subsequently govern myself accordingly, and give the serum as the best known prophylactic treatment.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER III.—AT THE UNIVERSITY.

(*Continued from page 550.*)

In respect to medical lectures the various universities differed greatly. In the Catholic schools the course covered for the most part the entire year; the lectures were largely public and their duration, as well as the text-books, were prescribed by law; as a rule the lectures were held in public halls. In the Protestant universities, on the contrary, the lectures lasted a half year, were not free and were frequently given in the houses of the professors. Teacher and student enjoyed unlimited freedom, in consequence of which most of the young men studied without system. Many students took too many lectures at one time, others began with practical study and neglected the theoretical. In order to fill their lecture rooms and also their purses the different professors encouraged the erroneous choice of the student. No wonder then that even in the best German universities the number of accomplished medical students remained comparatively small.

The learned gentlemen could not divorce themselves from lectures in the Latin language, and would in general accept no pupil who could not understand Latin. But most of the pupils failed in this knowledge; in fact it was an exception if a student could speak Latin. Finally the professors were obliged to

yield to the pressure of the students. When Frank became professor in Göttingen in 1784, his colleague, Heine, asked him to give his lectures in Latin. He did so. But after the first semester forty students declared to him that if he would lecture in German they would gladly pay him in advance, otherwise they would be obliged to forego his instruction, as they did not understand sufficient Latin. The professor contented himself with the mother tongue. This victory had its effect everywhere, and in 1782 in Austria German became the official language for lectures and Doctors' examinations. Emperor Joseph said: "The German is the true national language and mother tongue, in which medical prescriptions can as well be written as syllogisms and moral precepts in philosophy, and so forth." The custom of *dictation* prevailed almost everywhere. It had continued centuries after the discovery of printing, because most books printed on pergament were very dear and the professors were very lazy. Louis XIV. commanded the dictating of special note-books. While on the other hand, in 1780 two new chairs were founded in Paris, for anatomy and surgery, with the conditions that the lectures be given in French, gratis, and without the use of note-books. Everyone knows that this bad habit has not disappeared even in our time; the celebrated Schleiermacher once said of the dictating professors: "I do not perceive why the king should appoint people who ignore the discovery of printing."

The collections and libraries should have been valuable for instruction, which had in view rather a mechanical learning by rote, than a free development of the intellectual faculties. True, there were here and there extensive natural history collections, but they were scarcely moved from their places by the professors, seldom if ever used, and only admired by strangers. In France all collections were gratuitously opened to the public, but in Germany they were as inaccessible as the holy of holies of the Jews. Joseph II. bought the Goetz collection of entozoöns, excellent for that time, and presented it to the University of Pavia. Certain scholars possessed rich cabinets. Professor Günz at his death left some thirty skeletons, 437 dry specimens and 281 in alcohol. Ruysch in Amsterdam had an anatomic collection for which Peter the Great paid 20,000 guilders. Van Swietan presented his collection of anatomic specimens, which he had brought with him from Leyden, to the University of Vienna, and thus furnished the nucleus of an anatomic museum. The specimens, mostly injections, originated with Ruysch. Albir and Lieberkühn, and were valued at 20,000 guilders. When the naturalist, R. A. F. de Reaumur died in Paris in 1757 in his seventy-sixth year, his natural history cabinet, which he bequeathed to the Royal Academy of Science, was considered the most complete in all Europe; 6,500 guilders had been previously offered for it by an Englishman. In the year 1802 the Berlin professor of anatomy, J. G. Walter, possessed an anatomic museum of 2,868 specimens which he had collected in the dissection of 8,000 cadavers, during a period of fifty-four years, and this collection he sold to the King of Prussia. We will mention later the collections of W. and J. Hunter. The accumulating of a *library* possessed a peculiarly powerful charm which our time, in which the impulse for the ownership of books is so very weak, can not appreciate. A library was the pride of the cultured. Twice a year, at Easter and Michaelmas, regular purchases were made; at those times the book dealer brought the newest publications with him from the Leipzig fair, and displayed them in his shop. That was an important time for the book lover; the shop became the center of literary discussion. There was also opportunity to buy old books, although the antiquarian book trade outside of Halle and Leipzig had attracted little attention. Among the physicians a few were noted for magnificent libraries. Günz left such a one, whose catalogue required sixteen pages; the Arabic, Greek and Latin physicians covered five of these pages and Hippocrates alone covered a whole page. After Heister's death the catalogue of his anatomic, botanic and surgical books showed 6,338 numbers, beside an herbarium of 98 volumes, 1,744 copper-plates and 470 surgical instruments, among them many of silver. According to a note by Börner, Heister's herbarium in the year 1725 consisted of sixty-six folios and over 6,000 plants; he is said to have preserved at that time many skeletons and specimens, the greatest collection of most beautiful anatomic and surgical instruments, about 1,200 books and over 200 volumes of theses. Joseph II. bought A. von Haller's large library for 2,000 Louis d'or and had it brought to Milan. Upon his departure from St. Petersburg in 1808, Peter Frank sold his books on account of the expense of transportation to the Crown for 2,000 rubles, and they were then presented to the University of Cassan. In the universities much was done for the libraries, especially in Göttingen. This was one of the richest and was equipped with the best catalogue. By reason of the close relation between England and Hanover, the influx of English literature was always very great; the newest and rarest works came to Göttingen as soon as possible after they appeared, as presents from George III. On the contrary, as Lessing complained in 1768, English works were much more difficult to obtain in Berlin than French works. Professors and students had free access to the Göttingen library. Almost 5,000 thalers, about one-tenth of the yearly income of the whole university, was received by the library, which, during the eighties, added about 2,200 volumes yearly. There were often disadvantages coupled with the lending of the books, at least Baldinger asserts that many Göttingen professors frequently borrowed from two to four hundred books at once and returned them every half year, but immediately borrowed them again, so that they retained the books as their own property for the rest of their lives. This abuse, together with the circumstance that the university library purchased no translations, moved Baldinger (1780) to found a medical reading circle for the students.

If we enter the circle of *professors* we find, as Gruner says in his almanac, many drones on the list. Young men who had scarcely finished their studies, and who had not yet shown the least evidence of their learning and ability, were given professorships simply upon recommendation. Marry a professor's daughter and you have the best prospect of becoming an academic teacher, was at that time an approved method. There were professors of chemistry who had a year before been apothecaries' journeymen, and a teacher of veterinary medicine who had shortly before officiated as a shaver of beards, and had never studied these sciences. Many of them never thought of changing their notes for lectures, and did not trouble themselves at all over the advancement of science. To

restrain the arbitrariness of the professors an order was issued at the Universities of Marburg and Rinteln in 1782 to arrange the lectures so that it would not be necessary to double the hours at the end of the semester. In this way opportunity was given the students not only to study the profession diligently, but to do some active work in the supplementary sciences, ancient and modern languages, mathematics, philosophy and history. At the death of a member of the faculty the very bad custom was usually followed of appointing in his place, the professor of an entirely different department; for example, a former anatomist lectured later on pathology or materia medica. J. J. Plenck was first professor of anatomy, surgery and obstetrics in Basel, then in Ofen; with a change of places he also changed sciences, and taught chemistry and botany in Joseph's Academy in Vienna. Hildebrand was professor of anatomy in Brunswick, then professor of chemistry in Erlangen. To many it was a definite object to read and write in various fields. In this way nothing of value could be accomplished, and if such men as Boerhaave could lecture with the greatest success in chemistry, botany and pathology, and A. von Haller in anatomy, physiology, botany and surgery, yet the teachers who could excel in various sciences were always exceptions. It was from early times a custom in German universities to have only two head professorships in medicine, the theoretical and the practical. The former included botany, chemistry, anatomy and usually surgery; the practical did not represent clinical instruction, but was limited to the exposition of special pathology, medical science and so-forth. Only in the course of the eighteenth century did the *professores anatomiæ et botanicæ* disappear from the high schools, and at the end of the century there followed the separation of the professorships of anatomy and surgery. The instruction itself was generally very poor. Even at the end of the century there was a professor of physiology and obstetrics, who, in order to display his literary knowledge, had great loads of books continually brought from the library and consumed nearly the entire time in dictating the titles of these books to his pupils. Another who was separated from his wife, entertained his hearers with domestic curtain lectures, which he seasoned with obscenities. Many of them did not trouble themselves as to whether their lectures were systematic or not. In the eighties, a professor of anatomy in one of the celebrated universities in Germany, began his course with a demonstration of the ductus thoracicus. The next day he showed the muscles of the neck, on the following the veins and nerves of the hand, and he consumed fully three hours with the N. phrenicus. When the students, because of his unsystematic course, sought other lectures he was very indignant, but he made no change (Schmidtmann's Medicinalverfassung). Meiners asserts briefly and conclusively that the practical instruction in medicine and surgery in most of the universities was only a farce; dissection was not taught, only in the first half of the century. Honors and money were so distributed among the German professors, that they often had too much of the former and too little of the latter. The Austrian professors for a long time enjoyed the title of excellency, till this abuse was abolished (1755) and they were then called *clari celeberrimi*. They were admissable to the table of gentility.

Later to them as well as to the matriculated doctors, and to the wives and widows of both, "was given by judicial act of the magistrate, the use and possession of the honorable titles of Herr and Frau." Most of the professors of medicine were poorly paid; their incomes, much the same as a hundred years earlier, were not in proportion to the increased cost of living. In Austria, since the reformation of the Vienna University under Emperor Ferdinand I. (1533), they had not received more than 120 guilders; even the professors of surgery in 1537 had a salary of only 52 guilders. This little appears better when one reflects that these guilders were golden guilders, that is ducats, and that living in Vienna was so cheap that in the fifteenth century the medical faculty paid a yearly rent of about nine guilders for their house. A measure (two quarts) of wine cost in 1497 one pfennig, and a house, such as the beadle's house together with the prison, 100 guilders. The value of money and the necessaries of life, compared with that of our time, make those 100 golden guilders worth 6,000 guilders of the present money. Van Swietan first increased the incomes of the medical professors of Austria, when, beside obtaining for them the title of royal councillors, he raised their salaries to 2,000 guilders; he even secured to the excellent scholars trained by him the triple income of an *indigène*. They had a special gratuity for the publication of a learned work according to the value of the work, and in 1791, by order of Emperor Leopold II., they received their income from real estate in order to secure them. The college fees for the philosophical and medical studies amounted to 18 guilders a year, and especially industrious students were even given free tuition. The Göttingen students paid five or six thalers for most courses, in the practical department ten thalers. The counts paid double these amounts. The anatomist, J. G. Walter, in Berlin, served the first three years without salary, then ten years (1764) as second professor with a salary of 240 thalers, finally fourteen years as first professor with a salary of 800 and 1,000 thalers. Hufeland was nine years medical director of the clinic at Jena, and like his colleague did not receive the least revenue, although he spent two hours a day in the clinic. When, about this time and at the same university, Schiller was "deluded," as he says, into becoming professor of history, he received no salary (1789). The five courts of Weimar, Gotha, Coburg, Meiningen and Hildburghausen combined did not have the means to pay one such professor as Schiller a salary. Only in 1790 the duke, "with lowered brows and an anxious face," gave him 200 thalers. Necessarily, a desire arose for new service; gold flowed freely as soon as one taught in various lines. Beireis, in Helmstadt, gave twelve lectures daily; later when he had "whetted" his tongue, only eight. A few professors divided their subjects so as to increase the number of paying students, haggled with the poor students about the price, and was satisfied with twelve groschen if they could not get more. Occasionally they even joined students' societies in order to get more hearers in that way. The result of these miserable conditions was eternal quarreling and strife among the teachers and the eagerness to better their finances through perquisites, the principal source of which was the graduation fees.

The clubs brought about social intercourse. In Göttingen, where A. von Haller complained that the professors did not get money enough to see, a club of some eighty members was formed in 1787, in which the professors, jurists, physicians and preachers of the city met one evening a week for friendly intercourse.

In foreign countries the professors usually enjoyed a high rank. Those of the University of Toulouse were knights (1776), and in Pavia the word "Don" was placed before their names. Russia gave them all the position of court councillors. The French professors were so well paid by the state that their courses were free, one paid extra only for chemistry and anatomy; in Nancy in 1779 the winter course in anatomy cost thirteen livres. The English hospital physicians demanded of the students a full purse, since they received no income from the state. In Pott's time, whoever attended the operations in Bartholomew's Hospital, as in most London hospitals, paid twenty-five guineas a year, eighteen guineas for a half year; if he adjusted bandages himself he paid fifty guineas a year, thirty-six guineas a half year. Pott charged for his practical course, which he gave once a week in the winter, five guineas. John Hunter gave free lectures in surgery to the surgical students of St. George's Hospital, but charged four guineas for a seven-months' private course in surgery, which he gave three times a week in an amphitheater in his home, built expressly for the purpose. Marshall's lectures in anatomy, physiology and surgery cost three guineas a half year; the same is true of Ev. Home's course in surgery, while he charged five guineas for his instruction in dissection. Hawkins earned so much in London that his estates alone yielded annually a net profit of £1,900 sterling. The Russians also paid well; Mohrenheim (1783) was called from Vienna as director of the Russian hospitals, with a salary of 3,000 rubles, and Professor Krackstedt, in the St. Petersburg Medical and Surgical Academy, was paid 1,800 rubles with a residence, wood, light and service. At the hospital in Stockholm, the physician and surgeon each received a salary of 3,000 thalers.

With the conclusion of study came the much desired Doctor's degree. We have remarked before that most German states prescribed three years' study of medicine; only in Austria, at first six years were required, under Joseph II. five, and finally four. The French under Louis XIV. had to study three years, under the republic four years. Pope Gregory IX. introduced academic degrees in the thirteenth century and the first "Masters" was created in Paris by his bull. The "Doctors" followed them. In the eighteenth century in Germany the graduation presented a very unpleasant picture; even at the end of the century it was attended with the most wanton abuses. "Like weaving, they ran off every year a certain number of pieces, that among the physicians often turned out worse than the worst rubbish; the title of Doctor had no longer any value because it had become a commodity which every one could buy for money as readily as a laced coat." (Frank, Tissot.) Every year a crowd of young men were made doctors, many of whom did not have more than the first principles of science. With unheard of frivolity they glided superficially from one science to another, and in examination, counted on the partiality, fellow feeling and self-interest of the professor. In short when the newly pledged Æsculapius settled himself to practice, then woe to him, who without discrimination, in blind faith in the fat letters of his diploma, "did not seek to protect himself against them as against a swarm of locusts." The faculties vied with each other in making the examinations as easy as possible, so that the students would not think of going elsewhere with their money. They even exempted the candidate, on account of his well-known ability, from both examination and thesis. If we do not do it others will! Even at the young University of Göttingen some *in absentia* was given a degree. (1763.) The same abuse was practiced in France. Before the revolution testimonials alone was enough to secure the Doctor's degree. It was a practice with the French faculties to conform the examinations to the district where the physician intended to settle, so that the stupidest bungler could receive a diploma if he wished to practice among the peasants. Nothing was funnier than the method of becoming a surgeon. One bought from any prince for 1,200 livres the title of veterinary surgeon (chirurgien de l'écurie), and enjoyed thereby the right to practice surgery among men. Especially in France, at that time, the professions of physician, surgeon and obstetrician were followed with irresponsible light-mindedness. The seduction of gold was so great that many professors gave Doctor's degrees more cheaply that the artisans guilds gave their masterships. Although according to the statement of a Wolfenbüttler physician the fees for medical degrees in Vienna, in 1723, amounted to 1,000 guilders, this appears somewhat questionable, since it is certain that in 1753 the Prague medical students paid 95 guilders for the examination, 30 guilders for the thesis and 134 guilders for the degree. In Göttingen the degree of Doctor of Medicine cost 117 thalers and the certificate of the Triennum Acad. 12 thalers; in Marburg and Pavia 100 thalers. In Oxford and the other English high schools one paid seven times as much, 100 pounds sterling, for the Doctor's degree, and in France 1,000 livres. The periodicals of that time relate frightful stories of the trade in diplomas. Surgeons who could scarcely read German became doctors before they had submitted their theses. A shoemaker in Altona, named Menade, who had dabbled a little in medicine, applied to the University of Greifswald for the title of Doctor and presented the money. The president of the faculty took it, sent the diploma and wrote, or had some one else write, a thesis on shoemaker's pitch for him. When the matter became public the president was removed (1788). The abuse grew even worse. With the high-sounding title of palatine, easily obtained in the South German countries, was connected by imperial charter, the right arbitrarily to confer Doctors' degrees, to legitimatize natural children, and so forth. The lords made use of this right to the greatest extent. Their agents traveled around and informed surgeons and apothecaries, that on account of their well-known merits, the lord wished to confer upon them titles, for which each must pay six pistoles. In this way entirely rude ignorant barbers became doctors. Even in 1806 and 1807 the University of Erfurt, which had an average of only 30 students in all departments, turned out 97 doctors of medicine, of whom 28 wrote a thesis, 69 did not.

The most shameful abuses arose in connection with the theses. It is scarcely to be believed that at many universities the professors retained the right to write theses for candidates and sell them. Authorities for the statement are Husoty (Medic. Polizei, 1786) and the imperially chartered *Reichsanzeiger*, which in numbers 169 and 170, in 1802, relates the following of this impious business: The student, who chose his opponents himself, had the Latin theses with questions and answers, drawn up by a master; both questions and answers he learned by heart, so as to give the

right accent to the Latin words. The thesis did not cause the least anxiety, since every university had a storeroom where one could buy these wares at all prices. But in order to avoid the thesis-dealers becoming known, and to protect the young doctor from the raillery of his comrades and of the public if this by-way should come to light, a number of physicians and philologians united for the establishment of a thesis factory. The works were gotten up from various stand-points, one, with respect to the university by which the degree should be given and the particular views of the professors there; again according to different theories, as following Brown, Reil or Hufeland and so on; finally according to price. The cheapest kind of thesis cost four pistoles; they contained a short, incomplete description of a disease, no learning and bad Latin. Every university supplied such as this. Then came a kind for eight pistoles; in these were a description and treatment of a disease, apparently complete, mixed with many quotations, but nothing original; the Latin was indifferent. These theses were suited to universities which had large libraries. The third kind cost sixteen pistoles, and handled questions of the day; they presented no new points of view, to be sure, but the Latin was good. Finally, the fourth and most expensive kind cost from twenty-four to thirty-six pistoles. New ideas (!), the newest terminologies, a description of pathologic varieties with the necessary dawings, a compact decisive diction as an indication of the energy and genius of the author, and Ciceronian Latin. Specimens of this kind seldom appeared, yet at that time Halle furnished a few. Any one who wished to become a doctor sent the price with the necessary postage, stating at the time from which university he wished his degree and according to which system he wished the thesis written. Prompt and good service and strict secrecy were guaranteed. They were always careful to have a considerable number of these theses in stock, from which one could take his choice. In the year 1802, the following subjects were offered; for Bamburg, "On the Insufficiency of the Brown System and Inadequacy for the true Physician;" for Göttingen, "On the great Usefulness of Medical Consultations," "On Scarlet Fever;" for Jena, "On the Uselessness of a Scholar's Reputation to a Professor of Medicine," "On the Necessity of rewriting all popular Papers, and adapting them to the Principles of the Excitation-theory;" for Halle, "On the Variation of the Brain-matter from its Normal Form and Substance;" and further, "A Review of all that has been done for Medicine and all its supplementary Sciences, since 1800, together with a brief Opinion as to whether the Labor has been of Value." Würzburg, Erlangen and Kiel were supplied in like manner. So much for the *Reichsanzeiger*.

(To be continued.)

Connection Between Diseases of the Eyes and Nose.—Winckler has found that 50 per cent. of the children brought to the hospital for scrofulous affections of the eyes, were also affected with diseased conditions in the nasal passages. He emphasizes the importance of finding and treating both lesions promptly, as they are likely to spread and complicate each other. He considers the use of the galvano-cautery and of caustics dangerous, as he has known serious injury to result from them, and prefers surgical intervention, cutting out tumors, treating the catarrhal conditions with appropriate means and resorting later to blood reduction of the inferior turbinate bones, or whatever surgical intervention may be needed.—*Journ. de Sciences Méd. de Lille*, February 13.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 552.)

PECULIARITIES OF THE SURGICAL DISEASES, INJURIES OF THE LATERAL REGION OF THE NECK OR OF THE STERNO-MASTOID REGION OR CAROTID REGION.

Congenital malformations are represented in this region by the orifices of the branchial fistulæ, situated most commonly along the lower part of the anterior border of the sterno-mastoid; also by the congenital deformity of the sterno-mastoid, called hematoma of the sterno-mastoid, and congenital torticollis; also by the congenital atrophy of the same muscle. *Acquired malformations* comprise the various forms and varieties of torticollis and the deformities due to cicatrices. Cicatrices of the neck are most objectionable, especially when affecting the exposed parts.

Swellings of the region recognize the same causes, present the same forms and varieties as anywhere else.

Burns or frost bites present no peculiarity in the region of the sterno-mastoid, except when deep and reaching the sterno-mastoid or the underlying vessels and nerves.

Contusions or blows on the neck are always severe, but when striking the side of the neck over the jugular they are particularly severe and are comparatively frequent; they may cause a hematoma in the sheath of the muscle; they may cause paralysis or contracture of the muscle, producing a variety of torticollis; the muscle is sometimes ruptured, also the vessels and the nerves, these have a train of symptoms which will be described further on.

Non-penetrating *wounds, i. e.*, not extending deeper than the muscles and glands, are not serious unless through becoming infected. Penetrating punctured wounds of the neck may be deep without injuring the vessels and nerves, owing to the elasticity and mobility of the jugulo-carotid vessels. Penetrating wounds of the external jugular, of the internal jugular and the carotid arteries are more serious injuries. They all may give rise to circumscribed or diffused hematoma. When this is of some size and stationary it must be aspirated or incised. When it pulsates and grows, it is because a traumatic aneurysm has formed and the wounded vessel, vein or artery must be ligated above and below the injured point. When the penetration is comparatively small the sac may be incised at once, after making as good a pressure above and below as possible. When the puncture is large and there is risk of the patient bleeding much before the proper ligatures are secured, a provisional loop ligature must be applied below the wounded point. When the wound or the swelling is very low down, enough of the sternum must be resected to reach the root of the carotid and the innominate, and apply there the provisional loop ligature. Considering the gravity of a possible terrific hemorrhage this advice is not too heroic; never ligate the common or the internal carotid unless it is the wounded artery, because of the possible effects on the cerebral circulation. It is only when the persistent search for the wounded point of the vessel has not succeeded that the vessel itself should be ligated in continuity; below

only, if possible; a ligature above whenever applicable should be applied to guard against recurrent distal hemorrhage. We must bear in mind that arterio-venous aneurysm often follow punctured wounds which have gone through the vein and the artery. Wounds of the vertebral artery in this part of the neck are more common in the canal of the transverse process. At the base of the neck the wounds of the vertebral are more grave than those of the carotid.

The diagnosis of this wound will be made only when upon cutting down through the extravasated blood, it is found that the carotid artery and the jugular vein are intact. Then, when the hemorrhage is profuse, it should be stopped by plugging with the finger or by packing, and a loop ligature should be applied on the subclavian or the innominate before proceeding farther; when the wound in the vertebral is located it should be tied above and below; if necessary, the transverse process should be cut away with the bone-nippers. These remarks apply also to the wounds of the deep cervical, the inferior thyroid, the superior thyroid, the lingual and the pharyngeal.

Punctured penetrating wounds of the base of the neck are almost all fatal on account of the impossibility of reaching the artery without fatal hemorrhage. Punctured wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus) give rise to the symptoms of irritation of the nerves.

Non-penetrating incised wounds are only serious if the external jugular vein has been injured, because air may then penetrate into the veins. When the edges of the wounds lose their parallelism these may form a considerable hematoma. Incised wounds penetrating the sterno-mastoid and severing it incompletely are not so very serious.

Wounds dividing the sterno-mastoid muscle may curtail power of the muscle from lengthening, due to the cicatrization. When the muscle has been completely severed and the head is still, it is sometimes brusquely thrown to the other side by the contraction of the intact sterno-mastoid. In case of division of the muscle from operation this does not take place, because the other muscles have gradually become accustomed by the presence of the tumor to keep the head properly balanced. The severed ends must be strongly and closely stitched with strong catgut, and the head kept in proper position by a liquid glass bandage.

Incised penetrating wounds of the internal jugular are perhaps more serious than the wounds of the carotid, because of the danger of penetration of air. When the respiration becomes embarrassed the hemorrhage increases, just as in tracheotomy, where, as soon as the tube is introduced the hemorrhage ceases. These wounds are oftenest tearing wounds during the removal of tumors. Whatever be the cause, if the vein alone is wounded the blood is black and flows continuously. The first thing to do is to plug the opening to prevent the penetration of air; then make pressure above and below with the fingers, enlarge the wound and fill it with boiled water to prevent the possible penetration of air; then look for the wounded vein and ligate both ends. The proximal end is the most dangerous, because of the penetration of air and of the abundance of blood coming from the heart. When the compressing fingers are in the way or if their pressure is ineffectual, a previsional loop ligature should be placed around the internal jugular until the wounded ends are ligated. When the wound is low down, it may be necessary to resect the sternum and place a provisional ligature around the innominate vein or the superior cava. Incised wounds of the superior thyroid, lingual and facial veins close to the internal jugular are almost as severe.

Incised penetrating wounds of the carotids give rise to profuse, even terrific hemorrhage. When the wound is large or when the hemorrhage is moderate but not at once attended to on the spot, it may be immediately fatal. A man will thus bleed to death in four minutes from the carotid, it is said. When the larynx or trachea is wounded the blood penetrating into them causes death also from suffocation. The hemorrhage is sometimes stopped by fainting if the wound is not too large. Upon reaching such a case the first thing to be done is to plug the wound with the fingers or to pack it quickly. Packing will stop the hemorrhage temporarily if the vessel is of any size above one-sixteenth of an inch. It is best and safest to enlarge the wound and attempt to ligate the two ends in the wound; if this causes too much bleeding a loop ligature must be applied as above described. If the bleeding has stopped of itself it must be borne in mind that it will almost surely return, and that it may do so when proper surgical assistance can not be procured and the patient may bleed to death; therefore, the case should be treated as described above for punctured wounds. Incised penetrating wounds of the root of the neck are almost all fatal on the spot. The same remarks as above apply here. It is sometimes difficult to recognize which vessel of the neck has been divided; spurting, however, is characteristic of arterial lesion; but the vein may be divided at the same time. When the vein and artery are simultaneously wounded, ligate ends of both. In all cases where clamping stops the bleeding and a ligature can not be well substituted, the clamp should be left in place thirty-six to forty-eight hours.

Punctured wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus), give rise to the symptoms of the irritation of those nerves. Incised wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus), are followed by the following symptoms: When the recurrent is wounded there is aphasia more or less complete. The section of the phrenic and pneumogastric on one side only is accompanied by respiratory and circulatory irregularities; they are not necessarily fatal, but it is a most serious complication. Park has shown that only about 50 per cent. of these cases are fatal. Complete wounds of the sympathetic are followed by atresia of the pupil, slight ptosis, congestion of the conjunctiva, headache, congestion of the side of the face (unless only stimulated); it produces mydriasis, pallor of face, protrusion of eyeball. Injury of the superior laryngeal nerve is sometimes very serious. When possible, the divided ends must be sutured with fine silk.

Penetrating or deep contused and lacerated wounds of the region do not expose so much to primary hemorrhage, but the suturing of the muscles, the ligation of the vessels and the stitching of the nerves can not be relied upon as safely, because of the sloughing which usually follows those wounds; for the same reason secondary hemorrhages are much more common and more grave. Penetrating or deep gunshot wounds of the region call for the same remarks, plus the frequent

penetration of the digestive and respiratory tracts and spinal canal with their possible complications; the presence of a ball or foreign bodies deeply lodged and unremovable in these wounds injures the vessels more frequently and seriously than the deep punctured wounds. Here less than anywhere else should search be made for the bullet. When, however, the wound is large, the finger may be introduced, and if the ball is felt it should be removed.

Poisoned wounds, stings, bites, etc., present nothing peculiar in this region.

Foreign bodies, represented by bullets particularly, may remain embedded in the tissues without giving rise to any serious trouble; a bullet may thus remain in contaet with the large vessels without causing trouble, but not so with the nerves.

Rupture of the sterno-mastoid is the most common rupture of all the muscles ruptured; it has taken place after falls, sudden twists, violent muscular contractions. There is great pain, a depression on the course of the muscle, great hematoma; the head is often twisted by the action of the other muscle.

The treatment consists in placing the head in proper position, and immobilizing it in a liquid glass bandage. The rupture is usually partial; when complete the ends are far apart; it is well to cut down and stitch; otherwise a kind of torticollis may result from the lengthening of the muscle.

Neuroses are represented by the disease known as torticollis.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting, held at the Chicago Athletic Association Rooms, Feb. 9, 1897.

Dr. MONTGOMERY in the chair. There were fourteen members in attendance. The minutes of the last meeting were read and approved.

Dr. CASSIUS D. WESCOTT reported a case of

KELOID OF THE CORNEA.

In February, 1895, a baby 2 years old was seen with a disfiguring prominence on the cornea of the left eye. Parents, who were Scandinavians, gave the following history: Three or four days after birth the left eye became swollen and red and discharged yellow matter. No ophthalmologist was consulted until the cornea had become opaque. The mother says there was no change in appearance of eyeball for six months, and then the front of it began to grow and continued to do so for six months, and then ceased. Eye never seemed painful. The lids were never closed over the projecting eyeball.

From all appearances it seemed to be a case of total staphyloma with thickening and epidermization of the cornea, and an abscission was advised. But on examination, under an anesthetic, it was discovered to be a solid tumor. On examination of the specimen after abscission and evisceration, the cornea was found to have been perforated and the iris adherent throughout its entire extent, and that the cornea was uniformly thickened, measuring in the center nearly 8 mm. in thickness. The external surface was rough and the color that of the integument. The wound healed kindly, and several months after the operation the cicatrix was normal and the stump freely movable in the orbit. The specimen was placed in Fleming's solution and the hardened cornea examined by Dr. Hektoen, who made the following report: "The sections (30 to 40 microns in thickness) were stained with hematoxylin and eosin according to Van Gieson's method. Microscopically the anterior epithelial covering is somewhat, but uniformly, thicker than normal and the cells composing it are more flattened than usual, while those upon the surface have formed a relatively thick horny layer, so that the cornea is provided with a 'distinct stratum corneum.' In some places the lower layer of cells is of a brownish color, but otherwise the anterior epithelial layer of the cornea is free from pigment, but the conjunctival epithelial covering present is the seat of a light brownish diffuse pigmentation.

"Bowman's membrane is not conspicuous, its place being taken by fibrillated material. Under a low power the substance proper of the cornea is seen to consist of a densely lamellated structure, the lamellæ running parallel to each other, but are broader and irregular as compared with those of the normal cornea. Distinct fibrillated bundles run obliquely or transversely across the sections and often split into smaller bundles. Between the lamellæ are irregular narrow spaces that seem to contain nuclei; the interlamellar spaces are larger and plainer in the posterior strata of the sections. The substance proper seems to be avascular. In thicker sections (10 microns) the lamellæ are seen to be composed of fine and coarser fibrillæ that interlace rather irregularly, and the interfibrillar and interlamellar spaces contain connective tissue cells with large flattened nuclei (corneal corpuscles). Their number is not increased. The posterior basal membrane is absent over one-half of the posterior surface of the cornea, its place being taken by lamellated material; the posterior endothelial layer is absent completely, and its place is taken by an irregular layer of yellowish and brownish pigment granules and masses of varying thickness; whether the brownish pigment is all enclosed in cells or not could not be determined. The diagnosis would be, hyperplasia of the substance proper of the cornea (keloid) with epitheliosis of the anterior surface and a pigment layer upon the posterior surface due to prolapse of the iris."

Dr. WESCOTT, after an extended search of the literature, was only able to find two cases which at all resembled this case. One reported by R. Simon in the *Centralblatt f. practische Augenheilkunde*, 1882, page 193, the other by I. Szokalski, Warsaw, in the *Annales d'Oculistique*, 1865, page 209. He thinks the term keloid as applied to this case might be open to criticism. For histologic reasons it might perhaps be called a case of chronic inflammatory hyperplasia; but in its genesis it certainly resembles keloid.

Dr. LYMAN WARE reported a case of

PANOPHTHALMITIS FOLLOWING CATARACT EXTRACTION,

dacryocystitis being present at the time of the operation. The conjunctivitis and dacryocystitis were treated with nitrate of silver and other astringents without special benefit, and it was not until a solution of formalin, 1 to 5000, was used that any improvement took place. Five months after the patient was first seen a preliminary iridectomy was done on both eyes with good recovery, the eyes not being bandaged, and the formalin solution used three or four times a day. Two months later the cataract was extracted from the right eye. The wound was made at the sclero-corneal margin, coming out well back in the conjunctiva, making a good flap. The after-treatment consisted of washing the eye with a solution of formalin three times a day and having it covered with a wad of absorbent cotton soaked in the same solution. For the first two days the eye had all the appearances of making a good recovery. No pain was present and the wound was perfectly clean. On the third day the wound began to show signs of infection. The cornea soon became involved, panophthalmitis set in and the eye was totally lost. Under ordinary circumstances, Dr. Ware would not have ventured to operate on the cataract until several months had elapsed after the apparent cure of the dacryocystitis, but as the man had been blind so long, was old and feeble and thought he could not return again to the city and especially as the formalin solution seemed to control the dacryocystititis so well, he thought he was justified in making the attempt to restore vision.

Dr. A. B. HALE thought an operation for cataract should never be done if there was the least trace of dacryocystitis. In many chronic cases it was advised to excise the tear sac, the extraction being postponed until the wound had healed.

Dr. W. FRANKLIN COLEMAN mentioned a case of extraction where conjunctivitis, with muco-purulent discharge, was present, and yet a good result followed. A preliminary iridectomy was done, followed, in two weeks, by extraction.

Dr. EDWARD L. HOLMES had the same experience in similar cases.

Dr. HORACE M. STARKEY said that the only case of suppuration after cataract extraction in his experience happened in a case similar to that of Dr. Ware. The wound did well for 72 hours and then suppuration set in with destruction of the eyeball.

Dr. GRADLE asked if any member had tried obliteration of the tear duct with the galvano-cautery.

Dr. W. T. MONTGOMERY has closed the punctum with a hot wire. He thought that in cases of cataract extraction complicated with conjunctivitis a preliminary iridectomy should be

done, and he believed that there is much less danger of infection if the incision be made downward and with a conjunctival flap, followed by flushing the eyeball with boracic acid solution.

Dr. HOLMES asked the most recent method of destroying sac.

Dr. A. B. HALE thought the Kiel method gave the best results by cutting the sac out.

Dr. W. FRANKLIN COLEMAN enquired if any member present had tried Fick's method of chlorid of zinc injections into sac, thereby obliterating it.

Dr. A. B. HALE has tried it but stenosis resulted.

Dr. J. ELLIOTT COLBURN removed six sacs by the Kiel method with good results.

Dr. H. GRADLE has noticed that where the patient complains of lachrymation only when exposed to the wind, the chances of permanent cure are better than where the watering is continuous. In cases of stenosis he divides everything with the knife and does not depend on reducing stenosis by pressure.

Dr. W. T. MONTGOMERY has had similar experience to Dr. Gradle, in that the duct closes up immediately after passing probe alone.

Dr. W. H. WILDER presented a case of

PARALYSIS OF THE THIRD NERVE.

H. B., aged 25. First seen Feb. 19, 1896. Mother died at age of 26, of cancer. Patient contracted syphilis five years ago. Dec. 28, 1895, he first had diplopia, followed soon after by ptosis of the left upper lid, coming on suddenly without previous pain except slight frontal headache. At times there were attacks of dizziness. Examination shows paralysis of external muscles supplied by the third nerve. Pupils react to light and convergence and the patient can accommodate to $4\frac{1}{2}$ inches. R. V. 6-6; L. V. 6-9. No fundus changes. The lesion is probably in the nucleus of the third nerve, although it is uncommon for a nuclear palsy to be unilateral.

Not until this patient had reached a dose of 75 grains of potassium iodid, taken three times a day, was any effect seen on this syphilitic paralysis. Then power began to return to the levator palpebræ and as the dose was increased the superior rectus began to act; then the inferior oblique, inferior rectus and internal rectus, in the order mentioned. At present he is taking 160 grains of the iodid at each dose or one ounce a day. Dr. Wilder presented him chiefly as an illustration of the fact that the curative effects of potassium iodid are not exhausted with moderate or even with large doses, and to show what may be accomplished in syphilitic paralysis by the administration of heroic doses of the drug.

Dr. WILDER also presented the following case of

THROMBOSIS OF THE RETINAL VEIN.

Mr. E. G., 55 years of age, and apparently in perfect health, noticed on Friday, January 15, at about 1:30 o'clock, that the sight of the left eye had failed completely. There was no pain accompanying this trouble. When he was first seen by Dr. Wilder about thirty-six hours later, there was absolute blindness of the left eye. The pupil did not react directly to light, but reacted consensually and also to accommodation. Ophthalmoscopic examination showed pronounced edema of retina. The outline of the optic disc could not be distinguished. The veins were enormously distended and tortuous, filled with dark-colored blood, and had in places a sausage shape. The arteries were obscured in many places and seemed about the normal caliber, numerous hemorrhages were seen scattered throughout the retina. These appeared to be in the fibrous layer and were striated and frequently fan-shaped, in places covering the vessels. The vision of the right eye was normal with sph. + 2 D. The patient said he had kidney disease several years before, but an examination of the urine showed no albumin. There seemed to be a roughness of the first sound of the heart over the apex, and the second sound was accentuated at the base. At the present time he has slight perception of light downward to the temporal side. The swellings and hemorrhages in the retina have disappeared in a great measure; the veins have become smaller and have changed in places into white cords. These are seen best in the region of the optic disc. The arteries are also smaller than normal. It seems almost unquestionable that we have here to deal with a case of thrombosis of the central retinal vein.

Dr. CASEY WOOD presented a patient suffering from

PARALYSIS OF THE OCULAR MUSCLES DUE TO LEAD POISONING.

The patient, aged 49, a painter, had had lead colic five years ago, followed in two years by an attack of vertigo coming on suddenly one morning, and was then unconscious for half an hour and had pain through his head for two days, at end of which time he complained of diplopia, and in three weeks noticed that his left eye turned out. There is no history of syphilis or injury to head. At the present time L. V. is 2-5; R. V. 2-3; both unimproved by glasses. There is complete left ophthalmoplegia externa, with the exception of the external rectus and possibly the superior oblique. Ptosis is most marked when patient is not fixing. Pupils react very sluggishly to light and accommodation. With the ophthalmoscope few fundus changes are visible, but the outlines of the papilla are not clean cut; it has a woolly appearance. Fields of vision in both eyes are decidedly contracted for white and colors. Dr. Sanger Brown reports that, with the exception of the oculo-motor pareses and optic nerve defects, there is nothing abnormal about his nervous apparatus. Dr. Arthur Elliott found urine and saliva practically normal and free from traces of lead.

Dr. J. ELLIOTT COLBURN presented a

CASE RESEMBLING NEPHRITIC RETINITIS,

in a boy, who when first seen had loss of vision in the right, with lowered vision in the left eye. Slight convergent squint has been present since early childhood. He had just recovered from typhoid fever when blindness set in. The ophthalmoscope showed characteristic whitish spots, with hemorrhages, as seen in retinitis of nephritic origin, although the patient has had no nephritis.

On motion of Dr. Colburn, the April meeting was set aside for the discussion of Muscular Asthenopia.

On motion of Dr. Wilder, the Secretary was instructed to try to obtain a place of meeting with better accommodations for the exhibition of patients.

C. P. PINCKARD, M.D., Secretary.

SELECTIONS.

Increase of Mortality by Cancer.—The last report of the English Registrar-General sets forth in tabular form the facts regarding rising death rate by cancer for the ten-year periods ending respectively in 1870, 1880 and 1890. Throughout the entire period covered by the last three decennia the increase in mortality from cancer has been steadily progressive, the deaths referred to in this cause having been equal to the rate of 590 per 1,000,000 in the recent decennium, against rates of 384 and 468 respectively in the decennia ending with 1870 and 1880. If, therefore, the correctness of the published figures be accepted without question there is no escape from the conclusion that in the course of the last twenty years the mortality from malignant disease has increased by 53 per cent. Dr. Tatham, however, points out that the case is not quite so bad as would appear at first sight from the tables, and he emphasizes the fact that within the last six years alone the sum of deaths ultimately referred to cancer has been augmented by as many as 1,548 in consequence of the system of inquiry already referred to. These deaths have increased the rate of cancer mortality by 6 per 1,000,000. Apart from this, however, he thinks that the increase can not be held to be wholly real, but that a considerable portion of it may be accounted for on the assumption that the true nature of obscure cases of malignant disease is now more frequently recognized than was formerly the case, and that consequently the statements of the causes of death by medical men have latterly been made with greater precision than was possible in earlier years. Cancer mortality is known to vary widely in different parts of the country, but Dr. Tatham, having taken pains to ascertain the actual amount of variation in its local incidence, has clearly shown that the difference in the rates of cancer mortality at all ages can not be accepted as even an approximate measure of that incidence because of the enormous differences in the age distribution of the population in town and country. It is shown in the tables that cancer mortality is comparatively low among both males and females until after the 35th year of age; the mortality of a given place from cancer will, therefore, be largely dependent on the proportion of persons under and over middle age in the population. If, then, account be taken of the varying age and sex distribution of the local populations—in other words, if the cancer mortality among that part of a standard million of persons which is over 35 years of age be considered—it

will be found that the differences in the cancer rates of the various counties will be considerably reduced. To take a typical instance of this reduction: according to the crude rates Huntingdonshire showed a cancer mortality of 208, as compared with that of Durham, taken as 100; after this correction, however, the mortality of the first-named county, as compared with the last, is only as 127 to 100. It is to be remembered, however, that while correction for age constitution reduces the difference between the cancer rates of the various counties it scarcely alters the relative position of those counties as areas with high medium, or low rates of mortality from malignant disease.

A Bacteriologic Study of Scarlatinal Diphtheria.—The *British Medical Journal*, December 26, quotes von Ranke, in the *Münchener medicinische Wochenschrift*, October 20, on his researches as to the significance of exudative patches upon the fauces in scarlet fever. On 145 cases admitted to hospital in a period of two years, nearly ninety-two had more or less of membrane upon the tonsils; of these, eighty-nine cases were examined bacteriologically, and to these five other cases occuring in Munich, and also bacteriologically examined, were added, thus making a total of ninety-four available cases. The author discusses these cases under the following groups: 1. Cases admitted with scarlet fever and diphtheria and examined at once. There were sixty-seven such cases with six deaths. The streptococcus was found alone in 38.8 per cent., the streptococcus and diphtheria B. in 47.7 per cent., and the diphtheria B. in practically pure culture in 5.9 per cent. Thus the diphtheria bacillus was present in over 53 per cent. A negative result was recorded in 5.9 per cent. These cases are then compared with primary diphtheria. In 300, or 73.3 per cent. of 409 such cases the diphtheria bacillus and streptococcus were present, and in 75, or 18.3 per cent., the diphtheria bacillus in almost pure culture. Thus the diphtheria bacillus was found in 91.6 per cent., and the streptococcus alone in only 5.8 per cent. In the remaining cases the examination was negative. Thus the bacteriologic examination in scarlatinal diphtheria gives different results to that in primary diphtheria, but the fact remains that in Munich the diphtheria bacillus was found in more than half the cases of so-called scarlatinal diphtheria. The simplest explanation is that the scarlatinal angina predisposes to the diphtheria infection. The frequency of pure streptococcus pseudo-diphtheria is not due to the lacunar form of the throat affection. Of the six cases which ended fatally, the streptococcus alone was present in three, the diphtheria B. and streptococcus in two and the result was negative in one case. Descending croup existed in two cases, one with the streptococcus and diphtheria B. and the other with the streptococcus alone. 2. Cases admitted with scarlet fever but in which diphtheria subsequently developed. Here there were ten cases and all recovered. In one the diphtheria B. was found in almost pure culture, in seven the diphtheria B. and streptococcus and in two the streptococcus alone. This is different from the results in the first group, but the numbers are too small to base conclusions upon. It would seem, however, that the resemblance to primary diphtheria is great. 3. Cases with primary diphtheria in which scarlet fever developed later. Of these there were twelve cases and two deaths from pneumonia and nephritis. The bacteriologic examination resembled that in true diphtheria. It would appear as if scarlet fever were primary in these cases, the diphtheria being added during the incubation period of the scarlatina, and especially was this so in two cases. In spite of all precautions when the scarlet fever appeared in these cases the infection was conveyed to one or two other occupants of the ward. An incubation period of twenty-four hours in scarlet fever is possible, but is very rare. In every case of diphtheria careful inquiry was made as to whether there had been scarlet fever in the family, and when this was the case the child was always placed in the observation ward. 4. Cases in which the infection with scarlet fever and diphtheria occurred in patients in hospital for other diseases. In two such cases the streptococcus alone was present. In the one fatal case there was a descending croup. Among his conclusions the author points out that considering the relative frequency of the diphtheria bacillus in the so-called scarlatinal diphtheria, it is advisable to use the diphtheria serum in these cases.

How Sir Spencer Wells Conquered the Field of Ovariotomy.—The late Sir Spencer Wells may be said to have fought a giant when he entered the lists as an ovariotomist. Some faint notion of the fight that he dared to put up in this matter may be gleaned from an article in the London *Lancet*, January, a part of which runs as follows: In April, 1854, Spencer Wells, in company with his friend, Mr. T. W. Nunn of the Middlesex Hospital, assisted Mr. Baker Brown in his eighth case of ovariotomy. This was the first time that Spencer Wells had seen the operation performed, and its result, like that of six others of Baker Brown's first nine cases, was not encouraging. In discussing the case afterward Mr. Baker Brown remarked: "It's the peritonitis that beat us," for it was chiefly in the matter of after-treatment that the results of the operation form such a discouraging picture. Temporarily disheartened by his ill-success in seven out of nine cases, Mr. Baker Brown for a time abandoned all hope of introducing the operation, although he was in his own mind convinced of its reasonableness and ultimate utility. It was not until 1857, however, that Spencer Wells himself attempted the operation, and this he did contrary to the advice of his friend, Mr. Baker Brown, who nevertheless, assisted him. The result of his first venture was not encouraging, for he lost his case. He was not discouraged by this untoward beginning, but persevered, and in the following year his hopes were realized by the entire success of his second case. From that time forward the results obtained by him are a portion of the surgical history, not only of the century, but of all time. It is not only on account of his mechanical dexterity in a particular operation that Sir Spencer Wells deserves to have his name kept in honored remembrance. At the time when he turned his attention to ovariotomy the operation was so fatal as to be generally regarded as unjustifiable; and no common force of character was required to persevere with the operation. Feeling assured with the instinct of genius of the possibility of its ultimate success he says himself: "On taking up this subject as a matter of study and trial, just at the crisis when obloquy was the thickest and opposition the strongest, I felt that nothing but the most open frankness would carry conviction of success, or in case of failure justify the operation. . . . I therefore pledged myself to make known through the press all that I did and all that befell me." Sir Spencer Wells deserves the greatest credit both for having at that time the courage to make public his failures as well as his successes, and also for recognizing that only in such a way could it be hoped to establish ovariotomy as a justifiable operation. There can be no doubt that the large number of abdominal operations performed at the present day owe their inception to ovariotomy, and to Sir Spencer Wells belongs the credit, not of inventing ovariotomy, but of taking the principal share of the work involved in establishing that operation on a recognized basis. In 1857 he became lecturer on surgery at the Grosvenor Place Medical School, which eight years afterward became merged in the School of St. George's Hospital. Between the time when Spencer Wells first turned his attention to ovariotomy and the first occasion when he practically essayed it his energies were directed for the space of a year or more to a very different kind of work. Shortly after the war broke out in the Crimea he temporarily resigned his work at the Samaritan Hospital and his private practice and proceeded to Smyrna, where he became surgeon to the British Civil Hos-

pital there, as well as at Renkioi, whither he afterward proceeded. He saw a great class of injuries which were almost entirely new to him, and in the course of his work had the opportunity of attending to many abdominal wounds, experience which afterward proved most useful in his surgical work. He frequently stated in after years that it was during the war that he realized that the peritoneum would stand much rougher handling than he previously imagined, and it was this knowledge in great measure that reassured him in the operation and gave him a boldness which characterized his later work, and which results amply justified. At Renkioi he was associated with Dr. Parkes, who was one of his oldest professional friends.

Serum Diagnosis of Typhoid Fever.—At a meeting of the Society of Biology of Paris, Drs. Widal and Sigard communicated an improvement in their method of diagnosis. Till now the reaction by aggutination has been obtained by mixing fresh cultures of the typhoid bacillus with the serum of the patient under investigation. These bacilli when killed by heat lose their agglutinating power, and investigators have remarked that when the bacilli are destroyed with due care, whether by a temperature of between 57 and 60 degrees C., or preferably by adding a drop of formol to the culture, they preserve, even though dead, their property of agglutinating the serum of typhoid fever patients for as long as three months. Tubes can, therefore, be prepared with formol and preserved in the laboratories of hospitals, preventing the necessity of using fresh and virulent cultures—an innovation of considerable importance to general practitioners. The above information is supplied by the London *Lancet*. Drs. Wyatt Johnston and McTaggart, in the *Montreal Medical Journal*, March, refer to the fact that diabetic blood has been found by Block and by W. H. Park, to give a decided agglutination. They have examined two cases of diabetes which both gave perfectly negative results. Their latest investigations lead them to offer the following conclusions. The difference in reaction observed between typhoid blood solution and blood serum is not simply due to varying intensity, but to an alteration in the relative prominence of the agglutinative, paralytic and disintegrative phenomena which constitutes the reaction. The extent of this difference varies with the virulence of the culture, but the difference probably depends also on the presence of part of the specific substances elsewhere than in the blood serum. Blood solution has a greater capacity than blood serum for producing the disintegrative (bacteriolytic) changes described by Pfeiffer. Descriptions of this phenomena are conspicuously absent from the many recent accounts of the reactions with typhoid serum as observed in hanging drops. The paralytic effect is relatively more marked with serum than with blood solutions. Agglutination without stoppage of motion is more rapidly occasioned in virulent cultures by blood solution than by serum, and does not indicate existing typhoid. It appears preferable that for the dry blood method only attenuated cultures should be used. These have the advantage of being more easily kept in readiness than virulent cultures, and are less sensitive to changes of temperature. With the serum method virulent cultures give prompt results. Dried blood serum can be readily obtained and transmitted to the laboratory by pushing aside the edge of a blood drop which has clotted for a few minutes but has not dried, and collecting the serum beneath it on the tip of an ivory vaccine point, etc. This does not however give a quantitative result. For ordinary diagnostic purposes, the simplicity of the method as originally described does not require modification, provided attenuated cultures are used. A drop of the solution obtained from a dried typhoid blood drop, mixed with a drop of the culture, will give the reaction promptly, without any special attention to the degree of dilution. In order, however, to obtain the best results, it is well to dilute freely and especially to avoid having a sticky solution of syrup-like consistency. In cases where the clinical type strongly resembles typhoid and where the serum does not give the typhoid reaction, a decided reaction with cultures of the colon bacillus may explain the symptoms. Results with the dried blood test have been very satisfactory, giving uniformly positive results with genuine and well marked typhoid cases, and not reacting with non-typhoid bloods when attenuated cultures were employed. Although the use of serum undoubtedly enables the results to be recorded and compared with greater scientific precision, we find that dried blood answers just as well for routine diagnostic work. The alterations in reaction, induced by very slight modifications of the manner of testing, help to explain differences in the results reported by experienced and careful observers. With the same blood and culture, the amount of dilution possible largely depends on whether plain bouillon, bouillon culture or water is used for diluting. Opinions also vary as to what should be regarded as constituting a reaction. Personally, we do not think that anything less than complete clumping and total arrest of motion obtainable by the dry as well as the moist test in a young attenuated culture, should be regarded as typical.

"Idiots Savants."—Dr. Frederick Peterson, in the *Popular Science Monthly*, December, 1896, defines the above expression, which comes to us from the French, as applicable to all such idiots, imbeciles, or feeble-minded, as exhibit special aptitudes of one kind or another, apparently out of proportion to their intellectual developments in other directions, and often remarkable as compared with similar developments or faculties in normal individuals. There are many cases of this kind recorded in literature, inclusive of those who are exhibited as musical prodigies, calculating boys and the like. Beyond the fact of the existence of such curiosities, little has been written in explanation of these phenomena. Their psychology and physiology are alike obscure. Precocity and an extraordinary power of the faculty of mental arithmetic have been frequently noted in idiots. This faculty consists entirely of excessive powers in simple calculation and is observed only in the congenital variety of idiots, imbeciles and degenerates. In idiots, in whom the "musical faculty" is well developed in contrast to their general intellectual paucity, it is not of a high order. It consists of a remarkable auditory memory, together with a power of expression by means of the vocal musculature or fingers, of the musical memories stored up in the brain. There is no spontaneous musical expression, no power of invention. This form of memory is not limited to music; it has often included sounds of other kinds. There is a hereditary element in some cases, in respect of this musical faculty. Examples of *idiots savants* with talents bespeaking disproportionate development of the visual centers, together with the power of reproduction by modeling, drawing or painting, are occasionally to be met with. Among idiots, imbeciles and feeble-minded it is not uncommon to meet cases with an aptitude for drollery and given to witty or humorous remarks and actions. The court-fools of Shakespeare and the "drolls" of other writers, are the type of this class of degenerates. Any quick witted imbecile or feeble-minded individual in ancient times had no difficulty in securing a good livelihood, and sometimes even prosperity and fame. Under such conditions it became common for normal individuals to adopt the calling of the jester or buffoon, and these were known as "artificial fools." The author presents the following conclusions:

"The *idiots savants* are always among the congenitally defective, who usually have stigmata of degeneration. They are mere copyists in music, modeling, designing, or painting. Yet at the same time their talents stand out in strong contrast to their general feeble-mindedness. As a rule the aptitudes are precociously developed and are frequently lost before reaching adult life. The physical basis of such talents must be a precocious perfection of the cerebral organization in certain areas, together with a true hyperplasia of tissue in such regions and a tendency to early degeneration. There must be an increased

number of cellular elements and sensory-motor combinations and associations in definite parts of the brain. Cases of misplaced aggregations of such tissues in the brain have been described under the name of heterotopia of gray matter, and it is possible that some such unequal distribution of the structures underlying psychological processes will be found to account for the presence of the extraordinary talents of *idiots savants*. It is questionable whether Heinecken, the 'child of Lübeck,' should be included among any of the cases described here. He died too soon (at the age of four years) for the fact of mental weakness of any kind to be established; but his precocity made him the wonder of his time (1721–25). He knew the chief incidents of the Pentateuch at the age of one year, had mastered all of sacred history at two years, and was intimately acquainted with modern and profane history and geography and spoke French and Latin, beside his native tongue, at the age of three. Surely such precocity as this must have been due to extraordinary aggregations of gray matter in parts of the brain of a truly abnormal character."

PRACTICAL NOTES.

Connection Between Aneurysms and Syphilis.—A comprehensive study of this subject in the *Annales de Derm. et de Syph.* for January by Prof. G. Etienne (thirty-eight pages), announces that 70 per cent. of 376 cases examined were found to have syphilitic antecedents, and this is a minimum proportion, as it is so difficult sometimes to detect traces of old syphilis. With most of the aneurysms the infection dated from five to twenty-five years. No histologic difference between the aneurysms of syphilitics and non-syphilitics was noted, with rare exceptions. Mercurial treatment is successful if the gummatous infiltration is still susceptible to absorption without leaving scleroma behind it, so that the tissues can resume their elasticity. When the lesion has advanced beyond this stage, specific treatment is ineffectual. The article concludes with the statement that aneurysms, therefore, with tabes and general paralysis, can be included in what Fournier calls "para-syphilitic affections."

Sulfonal in the Insomnia of Melancholia.—Dr. Marcus Schnetzler, in the *Toledo Medical Reporter*, remarks that sleeplessness is frequently one of the most troublesome and obstinate symptoms with which the physician has to contend in the management of cases of melancholia. These patients are especially apt to yield to the seductive influence of such hypnotics as morphin and chloral, and to become confirmed habitués. For this reason these drugs, if used at all, should be employed with the greatest circumspection. In some of these cases certain non-medicinal measures, as warm baths, the cold douche, massage, exercise in the fresh air, will bring the longed-for sleep and should always be given the preference. There always remain, however, a fair proportion of cases in which a hypnotic is positively demanded, and for this purpose sulfonal is claimed by neurologists to be especially desirable. If properly administered in hot fluids, as milk or tea, one-half to one hour before retiring, it produces calm, refreshing sleep, resembling the normal, without the risk of inducing a habit or disturbing the nervous system. In the treatment of simple melancholia, the author advises administration of 15 grains sulfonal every hour until sleep is secured, and he also relies upon this hypnotic in cases attended with delirium in conjunction with veratrum viride and bromids. The author also emphasizes the value of hydriatic measures, as cold shower baths of short duration, especially in melancholia accompanied with stupor, where they will sometimes produce satisfactory sleep without the employment of internal medication.

Operative Cure of Otitic Phlebitis of the Lateral Sinus.—In the 118 operations on record, the more audacious the operation the larger the proportion of successes. Simple mastoidectomy resulted in 16 cures and 21 deaths; mastoidectomy with the sinus opened and washed out, 17 cures and 15 deaths; and lavage of the sinus combined with ligature of the jugular, 31 cures and 18 deaths. Lambotte recently exhibited a patient cured a year before with a still more extensive operation. He first made a double ligature of the internal jugular in the neck, and resected the vein between them, fastening the upper end in the superior angle of the cervical wound. Then he ligated the transverse sinus as close as possible to the torcular Herophili, and consequently to the occipital protuberance. He then proceeded to the septic focus, and completed the ablation of the mastoid and antral osseous lesions, opening wide the sinusal cavity, removing all the peri-sinusal pus and the intra sinusal septic products, and opening the jugular bulb infected by the antral veins, completing the operation by establishing jugular sinusal drainage for subsequent lavages twice a day. The isolation of the septic focus preceded the removal of the septic accumulations, to avoid dispersing septic clots. The operation could be performed in more than one sitting if the patient is very weak.—*Progrès Méd.*, February 13.

Permanent Stigmata of Epilepsy.—Mairet and Vires of Montpellier, state that a genuine attack of epilepsy can always be recognized by certain unfailing stigmata: 1, the increased amount of nitrogen and phosphates eliminated in the urine. The latter rise from 33 per cent. to 50, 60 and even 65 per cent.; 2, the diminished toxicity of the urine emitted immediately after the attack; 3, disturbances in the temperature. The temperature falls during the convulsion, the period of stertor and sleep, after which it rises rapidly, attaining and even passing the normal temperature, until the average temperature of the day of the attack is higher than the average of other days. The exceptions are when the attack is accompanied by agitation; in these cases the temperature rises instead of falling, and is higher than normal, with the same tendency to remain high afterward as above noted. Also when the sleep is particularly calm and prolonged, the temperature tends to return to normal, but does not rise above it and often does not reach the normal. These modifications are constant and enable a genuine to be differentiated at once from an attempt at simulation. There is also a permanent symptom of latent or pronounced epilepsy, with or without attacks, and even when there has been no attack for years, viz., the hypotoxicity of the urine, which is evidently a function of the neurosis. It alse accompanies hysteria, but to a less extent. The toxicity is tested by injecting the urine into the vein of the ear in rabbits. In some cases of epilepsy as much as 480 c.c. per kilogram of rabbit were required to kill the animal, while 50 to 86 is sufficient with normal urine.—*Bulletin de l'Acad. de Méd.* January 26.

Typhoid Bacilli in Non-typhoidal Subjects.—Schneider, in the *Comptes de la Société de Biologie*, July, has examined soil, water and also fecal matter from non-typhoidal subjects in order to ascertain whether or no typhoid bacilli could be isolated from them. Elsner's medium was employed in all the experiments. There were made examinations from thirty-six specimens of water from different localities, of which eight were found to contain bacilli identical in their morphologic and cultural properties with the typhoid bacillus. They also presented the property of toxicity, and an animal which would usually succumb to their inoculation could be protected against them by a typhoid antitoxin. In two of the cases the water was taken from places in which typhoid was present and in five others typhoid had been present some months previously. Of the ten soil cultures which were made, the typhoid bacillus was found six times. In the fecal matter from non-typhoid subjects, a bacillus identical with that of typhoid was found in the stools of three patients not having typhoid and who had never had it. A negative result was obtained in five other cases. Of the eighteen organisms which are obtained from these different sources, twelve were pathogenic to animals, and a fatal issue could be prevented by the use of an anti-typhoid serum. The above experiments are of great interest

as bearing upon the etiology of typhoid and the fact that typhoid bacilli were found present in individuals healthy as far as the disease itself was concerned, shows not only the possibility of auto-infection but also the fact that unless certain conditions favoring the multiplication and ptomain-producing powers of the organism be present they are harmless.

Glutol in the Treatment of Burns and Wounds.—Thomalla reports that in burns glutol exhibits a most beneficial action. He employed glutol in old burns where the skin was broken. After removal of the scab, which is quickly formed, several times until there is not more suppuration, he allowed the scab to remain, and with very few exceptions effected a rapid and uncomplicated healing of the burns without leaving any scar. In one case of a burn upon the foot healing was less rapid because the patient kept at work and his shoe caused continual pressure and irritation of the wound. The reason why the scab may be allowed to remain over the burn after no more suppuration is feared, and therefore further decomposition of the glutol and liberation of the formalin is not necessary, is that the clean antiseptic wound heals more quickly under the protective scab than if the latter were removed at each dressing. He adds: In minor wounds I have often employed glutol, especially in such cases in which a bandage can not be readily applied, such as wound on the hands of workmen, who have continually to dip their hands in liquids, yet at the same time can not afford to give up work on account of the small wound. In such cases I dust the wound with glutol,and then apply collodion; over the collodion I dust another layer of glutol, and thus provide a wound with a firm impenetrable covering. When this glutol covering is removed after several days, the wound is found to be perfectly healed. According to these observations I do not hesitate to pronounce glutol as thy best antiseptic we possess in the form of powder, in which respect its complete freedom from odor must not be forgotten.—*Therapeutische Monatshefte*, January.

A Radical Procedure in Follicular Tonsillitis.—Dr. Maxson recites his favorable experience in the use of caustic for the prevention of follicular tonsillitis. In so far as this treatment seems to go to the root of the matter it may with propriety be termed "a radical treatment." The method of the author has the merit of being devised with a view to thoroughness, a quality that we all know the value of when dealing with throat-affections. The author says: "A revention of follicular tonsillitis is desirable in at least two classes of cases; those occurring during an epidemic and also those where there are repeated attacks occurring about once a year. Those occurring only during an epidemic can be prevented by a mild aseptic throat wash, with or without the internal administration of benzoate of soda. The chronic cases, which are subject to frequent and repeated attacks, are very annoying to the physician and damaging to the patient's health. Such was my experience until I discovered and applied a treatment that I have lately found to be known and used by others, but which is not mentioned in any literature that I have access to. The treatment consists in destroying the contents of each follicle that is diseased in both tonsils. I think that the follicle is not destroyed, but the colonies of germs that make an abiding place in the follicles are destroyed. My custom has been to take a doubted piece of silver wire, such as is used for suture, and solder its free ends to a large wire; then dip the doubled silver loop into melted nitrate of silver, so as to make a small bead on its end, after withdrawing it from the melted silver salt. The silver wire is then bent half an inch from its distal end, so as to make an angle of forty-five degrees. This bead of caustic is inserted into each follicle to its bottom. The depth will vary from one-fourth to one-half an inch. One caustic bead will usually treat from one to two follicles. By means of several beads, all the follicles may be treated. This treatment is undertaken at any time except when the tonsils are acutely inflamed. It requires one or two treatments to effectually prevent its return. I have used this treatment for eight or ten years, and found it entirely reliable. I know of no case that has not been given a very complete immunity, even when subject to attacks every two to eight weeks before treatment."—*Journal of Practical Medicine*, December.

Argentamin in Urethritis.—Dr. Ascher, of Buda Pesth, in the *Deutsche Med. Zeitung*, for January, records his experience in hospital cases, twenty-two in number, of gonorrhea, with this so-called "silver nitrate substitute." Argentamin is an ethylene-diamin-silver phosphate and has hitherto had its chief field in regard to conjunctival diseases. Dr. Ascher offers the following conclusions: 1. This drug is well tolerated in the posterior urethra in solutions of 1 to 1,000, or even 1 to 250. In the urethra anterior a solution of 1 to 1,000 is also well tolerated, but solutions of 1 to 500 begin to be unpleasant, patients complaining of burning for a quarter or half an hour after injection, especially in acute stages. Ascher therefore recommends the employment of solutions of 1 to 1,000 to 1 to 250 for the urethra generally, and of solutions of 1 to 1,000 or 1 to 2,000 for the urethra anterior. After employment of solutions in any degree of concentration the purulent secretion increases at first, but in the course of three or four days rapidly abates. 2. Argentamin is an excellent gonoccoci destroying agent. The gonoccoci disappear extraordinarily quickly from the secretions, even when a solution of 1 to 1,000 is employed, either by means of an Ultzmann instillator, or by means of a simple syringe, in ten to twelve days. Argentamin has a more rapid and positive effect upon the gonoccoci than all other antigonorrheics hitherto known. It surpasses even silver nitrate. It possesses considerable penetrative action. It is much cheaper than silver nitrate, and in the above concentrations neither stains the hands nor linen. In the author's opinion, however, astringents can not be entirely dispensed with; in many cases the scanty slimy discharge of the last stage can only be completely done away with by their use.

Congenital Spastic Rigidity.—This affection, also sometimes called Little's disease—so named after an English surgeon who, in 1882, first drscribed it—includes both somatic and psychic defects such as are seen in a class of infants born before the full term. Dr. Collins, in the *Medical News*, February 6, takes up the subject chiefly with a view to throwing light upon the still obscure pathogeny and pathologic anatomy of the disease. He desires to bring out the fact that of late Van Gehuchten has been studying the subject to some purpose. That writer, whose contributions are to be found in recent issues of the *Journal de Neurologie*, discusses both the etiologic and clinical aspects of the disorder. He points out that those authors who teach the occurrence of this condition in children born at full term with the aid of instruments are in error, at least in part. He believes that obstetricians are nearly in accord that the symptom complex of congenital spastic rigidity is commonest in children born prematurely; and it matters very little whether the birth be an easy or a difficult one. At this time of life the pyramidal tracts are almost wholly non-medullated and naturally, therefore, devoid of the ability to functionate. The first tracts to become medullated are those constituting the indirect motor pathway—the pathway through the pons cerebelli—while the direct pathway—the cortico-spinal fibers—are very much delayed in acquisition of myelin sheaths, and perhaps may never develop them at all. In its downward growth during the latter years of infancy, the tract of the cortico-spinal fibers reaches first the upper and then the lower levels of the cord, those fibers destined for the lumbar and the sacral portions requiring the longest time to reach their destination. In accordance with this the rigidity and contracture disappear first in the face and head, then in

the upper extremities, and remain longest and perhaps do not disappear at all in the lower extremities. In short, therefore, the author contends that absence of the myelin sheaths of cortico-spinal fibers constituting the pyramidal tract is attended by the same clinical phenomena as degeneration of these fibers. In both conditions there is an absence of inhibitory action of these fibers upon the motor ganglion cells of the anterior horns, consequently the spasticity. If his claims are corroborated by other investigators, a very important step will have been taken for a satisfactory explanation of the pathogenesis of this condition, and possibly also for the prevention of its occurrence. If it be a developmental defect dependent upon premature birth, the prevention of the condition will simmer down to an obstetric problem, to wit: How can delivery be delayed until the period of complete fruition?

Lawson Tait on the Treatment of Uterine Myomata.—Mr. Tait writes in London *Lancet*, February 6, objecting to a statement that had been made to the effect that the Gynecological Society of England had for three or four years insisted that total extirpation of the uterus was the best treatment for these tumors. He says: "Those who gave utterance to this sentiment as that of the Society form, no doubt, an extremely important section of it; but it is equally certain that an important minority will not give their sanction to any such opinion. I think it probable, for example, that Dr. Bantock and myself could make a larger list of cases of myoma treated in various ways than all the other members of the Gynecological Society put together, but neither he nor I have made up our minds as yet definitely on the subject—at least, I can speak for myself. I have tried a number of cases of the so-called 'pan-hysterectomy,' and have a list much longer than any yet published in England, and I do not find that it commends itself to me in preference to Koeberle's method save in the one particular of being somewhat easier. Indeed, in those cases for which it is adapted I can not understand how an hour and a half or even an hour can be spent over it, unless the proceeding is much interrupted by unnecessary conversation. Its primary mortality, so far as my own work is concerned, is much the same as the clamp operation, but it is too early to speak positively upon this important point. As adverse arguments to the operation there are several points to consider, the first being that there is a distinct group of cases for which it is absolutely inapplicable, and these, unfortunately, are the cases which demand hysterectomy most of all—I mean the soft edematous myomata. In the tumors having uterine tsssue at their base, firm, not given much to shrinking, and with vessels well-defined and separate, the operation can be easily applied. On Thursday last I operated for one of the former class of tumors, and started with the intention of trying the pan-hysterectomy, but found it absolutely impossible. It is, however, upon secondary results that the fate of this operation will depend, and I have seen already enough of them to make me suspect that it will be speedily discarded. The reason is the unfortunate effects of the ligature, a paper on which I published some time ago. In this operation the ligature is not dropped into a peritoneum, which speedily digests and absorbs it, but is pressed among tissue peculiarly apt to resent interference. Concerning the lower ligatures it must be borne in mind that they are placed with nothing between them and the cavity of the bladder but part of its denuded muscular and the whole of its mucous coats. These form but a slight protection against a dead ligature finding its way into the bladder. In addition to such an accident as this, three or four other forms of accident have already passed under my notice, namely, the formation of leakage from a ureter, leakage from the bladder and leakage from intestine, all incidents occurring long after the primary success had been obtained. Personally I have been now for twelve years patiently waiting for material upon which I could emphatically express my opinions as to the complete and the best methods of treating myoma, but one thing after another has arisen to alter the opinions which I thought had been steadfastly established, and even yet I am obliged to refrain from writing fully on the subject. I think with the knowledge of this that the younger members of the Gynecological Society will refrain from the positive expressions of opinions which must be premature, and at least they will not pledge the whole Society to opinions against which many of their seniors certainly must enter an energetic protest.

Treatment of Malaria (Laveran).—Laveran always prefers to administer quinin in solution when possible, as pills become too hard to dissolve, powders are not transportable, the endermic method is painful, and while enemas are useful in the case of children, they are rejected by adults. The hypodermic method ensures good and prompt results. For this he recommends the formula: Bihydrochlorate of quinin, 5 grams; aqua dest. q. s. to make 10 c.c. One c.c. of this solution contains 0.50 grams. of the salt. Baccelli has used intravenous injections successfully, but they are not entirely inoffensive. The type of the fever should not modify the treatment, which should be as follows for an adult: For three days, 80 centigrams to 1 gram of hydrochlorate of quinin. The fourth, fifth, sixth and seventh days, no quinin. The eighth, ninth and tenth days, 60 to 80 centigrams of hydrochlorate of quinin. From the eleventh to the fourteenth day, no quinin. The fifteenth and sixteenth days, 60 to 80 centigrams. From the seventeenth to the twentieth day, no quinin. The twenty-first and twenty-second days, 60 to 80 centigrams of hydrochlorate. This is the usual formula, which can be modified to suit the circumstances. The same salt is given to children in the following proportions, divided into several doses during the day: Children of 4 and over, 30 to 40 centigrams; 2 to 4, 20 to 30 centigrams; 1 to 2, 10 to 20 centigrams; less than 1 year, 5 to 10 centigrams. In severe attacks we must not hesitate to administer quinin hypodermically to children. Quinin is borne better between the attacks and may abort them, but it is not necessary to wait until the fever falls. Maillot has well shown its great efficiency in continuous fevers. In very severe cases, 0.75 to 1 gram should be injected twice in the twenty-four hours. As the fever yields to the injections, the formula above should be followed. In pernicious attacks also, hypodermic injections should be made, and in the algid form, frictions, diffusible stimulants and injections of ether will be found useful to supplement the quinin. In attacks with coma, use counter-irritation, cold applications and drastic purgatives. Hydrate of chloral should be prescribed for delirium and in the case of alcoholics. Vomiting is combatted with champagne, effervescent drinks, and injections of morphin in the pit of the stomach. Diarrhea, with opium and subnitrate of bismuth. In bilious fevers ipecac and calomel should be administered, but not until after the quinin. All tonics are useful as they increase the resisting powers of the organism. Arsenic, iron and nux vomica render important services, in supplementing the quinin. Hydrotherapy is also useful, but the douche should be tepid and brief at first and the region of the spleen should not be douched at first at all, as a cold douche on that region has been known to induce new attacks. Change of climate is a powerful tonic for persons living in warm countries. In case of hyper-splenotrophy the use of counter irritants can be combined with the quinin, even the local cold douche, intrasplenic injections of 1 c.c. Fowler's solution 1 to 10, or of a 200th phenic solution. Electrotherapy (Botkin) injections of sterilized water (Nurri), and injections of ergotin have also been tried. Splenotomy has been performed, but he considers it contra-indicated. None of the substitutes proposed for quinin can take its place, and the sole objection to its use is that it is rather expensive. Preventive doses of 10 to 20 centigrams a day have given excellent results. The water in malarial districts should be boiled and filtered and taken preferably in the form of coffee or tea. Plantations of the eucalyptus, globulus and rostrata, have been found effective in reducing malaria in Corsica, Algeria and Italy.—*Progrès Méd.*, February 13.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, MARCH 27, 1897.

AN UNUSUAL MANIFESTATION OF HYSTERIA.

Physicians who have had a wide experience with hysteric patients are apt to regard all other patients who come to them with an eye strongly disposed to discover hysteric manifestations, while on the other hand, those members of the profession who have not met with many such cases often overlook the possibility that obscure symptoms may be due to this strange cause of perverted functional activity. The common symptoms of hysteria as manifested in the various disorders of sensation and hemi-anesthesia are so manifest that they often lead even the careless physician to a correct diagnosis, but the more unusual types may well obscure diagnosis unless the physician is constantly on the lookout for their underlying cause.

Our attention has been particularly called to this matter by an interesting case reported in the *Journal des Practiciens* for Jan. 23, 1897, in which there was anuria due to hysteria, which is certainly not a usual symptom, and what is more important and misleading was the fact that there was fecal vomiting. In some cases of this character the fecal vomiting is simulated, but in this instance it seems to be really present. Among those who have reported feculent hysteric vomiting in authentic cases may be mentioned JACCOUD, RICARD, FOQUET, ROSENSTEIN, DE TULLIO, DESNOS, ANDRE and BRYANT. In the case which we have mentioned and which is reported by HOORWEG in a Norwegian journal, the greatest possible precautions were taken to prevent malingering, because the physician observing the case, believed it to be one primarily of simulation.

The case consisted briefly as follows: A woman of 26 years, unmarried, had since the age of 12 years manifested neurotic symptoms, palpitation and terrors; at the age of 15 years she was assaulted and maltreated by two young men and at this time had hysteric attacks which were frequently repeated. Menstruation was established at 16 years and four years afterward she developed hysteric paralysis and other neurotic manifestations. At 20 years of age she had hysteric attacks two or three times a day and at this time there began anuria accompanied by the vomiting of liquids with a urinary odor. Two days after this, fecal vomiting took place. From this time for the remaining six years similar symptoms continued. The general condition, however, was fairly satisfactory.

An examination of the patient revealed various hysteric stigmata, such as anesthesia, analgesia, ovarian hyperesthesia and similar symptoms. Thinking that the vomiting might be due to an accumulation of fecal matter in the rectum HOORWEG used injections of a pint of warm water, which was gently introduced and in about four to five hours afterward the patient vomited an abundance of liquid with a fecal odor. An examination of the liquid which was vomited and possessed a urinary odor, showed it to contain on analysis urea and uric acid, but on two days when the bladder was emptied by means of a catheter the liquid vomited was still abundant in quantity.

As we have already said, the closest watch was placed upon the patient to see that she did not deceive her observers, but finally the physician in attendance came to the conclusion that she was able to develop antiperistaltic movements. With the object of determining this point a rectal injection of starch water and bismuth was given. Immediately after the administration of the starch and bismuth by the rectum lavage of the stomach and rectum were performed. Five hours later the contents of the stomach contained starch but no bismuth.

The treatment which HOORWEG instituted in this case was faradization of the stomach and rectum, with what he claims good results. The psychic condition of the patient improved to a very marked degree and the serious symptoms were put aside.

We have mentioned this case editorially because we consider all cases which are particularly obscure in their manifestations as being worthy of notice, and with the gradual increase of the number of hysteric patients which we see in this country all such records are of value.

THE "REST IN BED" TREATMENT OF INSANITY.

Within the past few years there has been a considerable interest and some enthusiasm aroused in and numerous trials made of a method of treatment of acute insanity by compulsory rest in bed. The idea is not

a new one, it is as old at least as the fifth century, when it was recommended by CÆLIUS AURELIANUS, and it has been more or less advocated and practiced by alienists all through the modern period of psychiatry to the present. It is in the universal application of the treatment to all cases of acute mental disorder, and to a considerable extent in the appliances and details of the method that whatever novelty it may possess consists. Rest in bed has been a regularly recognized therapeutic measure recommended in nearly all treatises on insanity for acute cases with rapid failure of strength or notable symptoms of physical exhaustion and in some not so very recent works, indeed, it has been advised for all acute cases. That this has not been generally practiced has been due to the fact that the means that have hitherto seemed most applicable for the purpose were deemed more objectionable than the end was beneficial; the bed straps, the crib, the manual restraint by attendants, the wet pack and the sedative drugs, one or all of which seemed necessary at first sight, have been at one time or another referred to the reprehensible practices of physical or chemical restraint that only needed mention to be condemned. The tendency has been to allow the utmost freedom of movement and to check even destructive tendencies only by the the mildest measures, such as the use of indestructible fabrics, the diversion of attention to harmless activities, etc. It will be questioned by some, undoubtedly, whether the enforced rest in bed, though without many or all of the most objectionable features mentioned may not be after all a return swing of the pendulum to some extent toward the older methods of the past. There are probably few, if any, alienists of experience who have not used confinement to bed to a greater or less extent in what seemed to them appropriate cases, and they would have used it more were it not that there has been a justifiable prejudice against the coercion that seemed necessary to effect it. The apparatuses of cribs, bed straps, restraining sheets, were all devised or used as therapeutic measures to prevent the weakened and delirious patient from wearing himself out by his constant activity, and were based on the principle that an insane person is an invalid and needs physical treatment for this disorder. That the tendency was toward their abuse by their employment as simple trouble-saving appliances does not alter this fact.

That we have learned better ways of enforcing the needed rest upon the excited patient is certainly a great advance, but it does not do away with the possibility of even these methods being abused for the same reasons and purposes as were the former ones. The rest treatment, according to its advocates and those who have tried it extensively, prevents a great many unpleasant accidents that are likely to happen when maniacs are kept on the wards, such as occasional exposures, removal of clothing, destruction and injury from other patients, and the need of seclusion in strong rooms, which is so often resorted to to avoid these, is done away with. This, nevertheless, does not make it any the less restraint when even the mildest forms of compulsion or drugs have to be employed to secure it, and it may therefore be counted as the most modern development of that much abused (in both senses) therapeutic method. This does not condemn it necessarily if it is really beneficial and sentimental considerations should have no great weight either for or against its employment. The non-restraint doctrine has apparently not been thus far employed to its prejudice of the bed treatment, though, as has been shown, it may be open to objections in this general line; on the contrary the idea of the maniac being handled by trained female nurses is captivating to many minds and it does appear this is more practicable, than has hitherto been supposed. It is fair to assume, however, that some selection is, at times at least, made of the cases, as it would be no more proper to put certain male cases under the care of females than it would to permit male attendants to care for similar female patients. It is a well-known fact that the presence of proper persons of the opposite sex has a certain restraining influence over most cases but this is not absolutely and invariably an efficient inhibition.

The really important question is, however, whether this method is a real advance in the therapeutics of insanity, or simply an improvement in the methods of meeting certain inconveniences without any actual curative effect in itself. In other words, is it a mere palliative or an actual curative measure. A recent writer, BERNSTEIN of Moscou, says, after a year's trial of the method in the psychiatric clinic of that city, that the one fact proven is that recovery is not more frequent and prompt under this treatment than under the older method, with all of its disadvantages. He admits that it controls the patients better and prevents disagreeable scenes and occurrences, and also that in this opinion he disagrees with others who have expressed the opposite opinion, but he but he quotes their own statistics in favor of his opinion. If he is correct the enthusiasm for the method in certain quarters is hardly justified, and it must be said that there is apparently a tendency toward conservatism in regard to the matter by other respectable authorities.

As a routine treatment the method can hardly be justified. A little consideration of the pathology of insanity would show this. Patients come to asylums in all stages of their disorder, and even acute cases may be past the point where the bed treatment would be beneficial. In some hypochondriac cases its influence might be directly detrimental, and in a general way we can not say that the somewhat mentally obtunding influence of absolute recumbency and quiet

tends invariably to mental restoration. As BERNSTEIN remarks, more experience will be required to settle this question.

In conclusion, we can say that in the bed treatment it has been demonstrated we possess a means of assuring or at least increasing the quiet and order, and of avoiding many disadvantages in the treatment of insane cases in asylums. That it is as curative, as claimed it is, is yet to be demonstrated. That it may be detrimental in some cases, especially when employed as a routine treatment, is not only possible but even probable. When its employment is carried on to the extent of "taking the troublesome cases off the other wards," as has been reported, it is open to the charge of being directly employed as a method of restraint and is open to whatever objections, sentimental or legitimate, may apply to such methods.

STATISTICAL INVESTIGATION OF SUNSTROKE.

The abnormal heat that prevailed over the eastern two-thirds of the United States during the last few days of July and first fifteen days of August, suggested to the Chief of the Weather Bureau the propriety of studying the subject of sunstroke, in so far as it is connected with and dependent upon meteorologic conditions. To this end, circulars were sent out to various hospitals and private physicians located in the affected region.

Dr. W. F. R. PHILLIPS, in charge of the Section of Climatology, has compiled and studied the different reports returned in reply to the circular letter, and his statistics and deductions, as given in the *Monthly Weather Review*, November, 1896, present several points of extreme interest.

From such sources as were accessible there were collected 2,038 instances of death during August, 1896, directly attributed to sunstroke. This falls far short of the actual number of deaths, and even figuring on the mortality of sunstroke as 16.6 per cent. (a ratio of death deduced from one of the statistical tables), the whole number of cases would be 12,277. However, the number of unreported milder degrees of sunstroke must have been enormous.

From a careful study of the tabulated investigations it was concluded:

1. That the number of sunstrokes follows more closely the excess of the temperature above the normal than it does that of any other meteorologic condition. 2. The number of sunstrokes does not appear to sustain any definite relation to the relative humidity, the maximum fatalities having occurred in one region with a relative humidity above the average, and in another region with a relative humidity decidedly below the average. 3. That although the absolute humidity was greatest during the maximum of sunstrokes, yet it does not appear that the variations influenced the number of cases.

Dr. PHILLIPS concludes that if it be taken into consideration that the maximum quantity of aqueous vapor in a given space is limited by the temperature of the vapor, and that the relative humidity is really not a simple meteorologic element, but an expression of a ratio that depends on both the aqueous vapor and the temperature, it would seem that the statistics herein collected confirm the proposition that sunstroke is ultimately due to excessive atmospheric temperature. In other words, sunstroke will not occur unless the atmospheric temperature be much greater than that to which the individual is accustomed, no matter what may be the state of the other meteorologic elements.

As to the atmospheric temperature producing sunstroke, it was distinctly shown that both the personal equation, and the accommodation of the individual to average physical environment, or the climatic equation, are important factors to be taken into consideration. While a temperature of 82 degrees, or 13 degrees above the August normal in Boston, prostrated a number of persons and was fatal to some, the great majority of persons were unhurt by the excessive heat. Again, the climatic equation is shown by the fact that this same temperature was easily endured in New Orleans without sunstroke or any particular inconvenience. Hence each particular locality has for its native or acclimated inhabitant a special local range of sunstroke temperature.

Dr. PHILLIPS also argues that sunstroke becomes imminent during summer months, when the mean temperature of any one day, or of several consecutive days, becomes equal or nearly equal to the normal maximum temperature for the same period; and also that the liability to sunstroke increases in proportion as the mean temperature of the day approaches the normal maximum for that day.

As an argument for the reprobation of alcoholic beverages in hot weather, it is shown that in 140 deaths out of 841 cases in Table 2, of the fatal cases in which a definite history could be obtained, those using alcohol to excess constituted 60 per cent., those using alcohol moderately 30 per cent., and total abstainers 10 per cent.

As might be expected, all walks of life were represented in the reports, and the greater number of cases occurred among those engaged in occupations apparently requiring physical rather than intellectual effort.

THE FIFTY-FOURTH CONGRESS AND THE MEDICAL SERVICES.

The Fifty-fourth Congress of the United States took no action affecting the status of the Medical Department of the Army. Its influence was felt only in the appropriation bills. The Act making appropriation for the support of the Army for the year ending June 30, 1898 provides all that was called for

by the estimates of the Surgeon General in the case of the Hospital Corps, the Library and the Museum; but some economical tendencies were manifested in dealing with the other estimates. The Act makes provision for the purchase of horses for such members of the Hospital Corps on field service as may require to be mounted. The Library obtains its usual appropriation of $10,000, to enable it to meet the literary progress of the year. Its increase during the past year compares favorably with that of any of the years of its history. A special effort was made to perfect the files of medical journals, foreign and domestic. The second volume of the Index Catologue, including the titles under the letter "B" will probably be ready for issue about the end of May. The second volume of the First Series published in 1881 carried the Index well into the letter "C." Since then the titles under the first two letters of the alphabet have more than doubled. This shows the magnificent progress made during the past sixteen years. An estimate of $12,000 for the continuance of work on the Catalogue was embodied in the Sundry Civil bill, which will no doubt be passed during the present extra session. For the preservation of specimens and for the preparation and purchase of new specimens for the Army Medical Museum, the sum of $5,000 is provided. Special attention has recently been directed at the Museum to perfecting the series of specimens illustrative of the development of the human system. Roentgen ray photography has been prosecuted with excellent results as shown by the many fine skiagraphs now on exhibition. A small cut was made by Congress in the estimates for medical and hospital supplies, the reduction being from $140,000 to $135,000. For the construction and repair of hospitals the sum of $75,000 was appropriated instead of $100,000 desired, and for the construction of hospital stewards' quarters $7,000 instead of $10,000.

The estimates of the Surgeon General of the Navy were honored in their entirety by Congress: $65,000 for surgeons' necessaries for vessels in commission, navy yards, naval stations, marine corps, coast survey, etc.; $30,000 for contingencies, as for expenses of examining boards, rent of rooms for various purposes, freight, express, telephone and telegraph expenses, etc.; $20,000 for the Naval Hospital fund and some special appropriations for improvements at certain hospitals, as $6,000 for the hospital at Chelsea, Mass., $4,000 for that at Port Royal, S. C. and $1,000 for the naval cemetery at Brooklyn, N. Y. An estimate of $1,200 for two ambulances for use at naval hospitals also was approved.

No legislative action was taken to improve the status of naval medical officers and enable the Department to fill its vacancies. We pointed out the injustice of present conditions in our issue of Nov. 7, 1896. At the same time there are fifteen vacancies in the Medical corps of the Navy; and there appears to be little desire on the part of young graduates to fill the vacant positions. We think this a mistake. Young men considering the merits of the National services should look at more than present conditions. The subject involves the service of a life-time and the possibilities of the future should be weighed as well as the actualities of the present. Improvement in the status of the naval medical officer is merely a question of time. New ships are being built, and they will have to be manned. The Navy is in progress of development. Its medical service will have to be increased and the young graduate who enters now may be floated upward into higher rank at an unusual rate by those who will enter after him.

THE ABUSE OF MEDICAL CHARITY.

The Medical Association of the District of Columbia has recently adopted recommendations intended to restrict the abuse of medical charity which has grown in the City of Washington, D. C., with a rapidity and malignancy which threatened the impoverishment of the general practitioner. These recommendations were printed in our issue of March 13, but as similar abuses are to be found in most of our cities, a few words of editorial comment appear desirable. "There is no profession" says the Ethical Code of the AMERICAN MEDICAL ASSOCIATION, "by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. . . . . Some general rules should be adopted by the faculty in every town or district, relative to pecuniary acknowledgements from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit."

Hospital and Dispensary boards of management seem to have lost sight of these requirements of the system of ethics of the profession, and as a result their annual reports present rose-colored statements of the amount of work done for the benefit of the suffering public. Much of this work, however, is done at the expense of the profession at large. Indiscriminate dispensary treatment keeps many a fee from the hardworking and poorly paid practitioner, and the pay wards of public hospitals, while adding to the financial resources of the institution, do not always add proportionately to those of the medical profession. Pay wards should be pay wards as well to the physician or surgeon in attendance as to the funds of the hospital. Were this the case, the hospitals would be restricted to their proper sphere, and family physicians would have less to say of their encroachments. The aims of the recommendations of the District of Columbia Medical Association are "to place a limit on the performance" of unrequited services, to sift

charity from its abuse, and to keep the hospitals from absorbing patients who are able to pay for medical or surgical treatment. Patients in private rooms in public hospitals are to be required to make proper payment to the physician or surgeon in attendance, as well as for their board and lodging. The seventh and eighth recommendations were drawn up with a view to protect medical members of the staff while insisting on proper remuneration in such cases; but incidentally they give moral and material support to the hospital staff in other matters. Whenever one or more members of the hospital staff resign or are dismissed, and the Association finds after due investigation that the resignation was based on just and sufficient cause, or that the dismissal was without such justification, "it is forbidden for any member of the Association to fill the vacany created thereby."

Other local associations might profit by following the example of the Medical Association of the District of Columbia, and in doing so they would be carrying into practical effect the requirements of the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION.

CORRESPONDENCE.

The Leprosy Conference.

NEW YORK, March 15, 1897.

To the Editor:—I send you the translation of a French circular which I have received from Dr. Ehlers, the Secretary-General of the Leprosy Conference. (Copenhagen). I add my reply sent to Dr. Lassar, a member of the Berlin Committee. Will you kindly publish these papers in the JOURNAL?

Very truly yours, ALBERT S. ASHMEAD, M.D.

COPENHAGEN, Feb. 23, 1897.

Sir and much Honored Colleague:—The conference against leprosy, which will take place in Berlin, in October, 1897, with the support and approbation of the German Government, proposes to itself to seek for information as exact as possible on the distribution and geographic extension of leprosy.

In the name of the committee on organization of said conference, I have the honor to ask you to help it in this work, and to do us the honor to procure us information as to the distribution and extension of leprosy, in the form of a general sketch of the distribution and extension of leprosy.

Your report is to be as short as possible (in German, English or French); we ask you to be kind enough to send it before the 15th of May, to Professor Lassar, 19 Karlstrasse, Berlin, N. W. It will be printed before the Congress, and will serve as a basis for eventual discussion.

I have to observe that we shall have also special correspondents for each country, so that we must ask you to give us only a general sketch.

Accept, Sir, and very honored colleague, the assurance of my high consideration. DR. EHLERS, Secretary-General.

NEW YORK, March 15, 1897.

Dear Dr. Lassar:—I have to acknowledge the receipt of a letter from your Secretary-General, Dr. Ehlers, by which I am invited to contribute a general sketch on the distribution and geographic extension of leprosy. In reply thereto I have the honor to observe that you will find about everything that I could say on the subject in my writings, some of which I sent you, with references to others which I did not send you. I do not see that there is any use of further talk about the distribution and geographic extension of leprosy. All these things are on record, and nothing is easier for any person anxious to obtain some light on any subject connected with this question than to consult what all good libraries offer.

Allow me to express once more an opinion which I have declared during the last months very frequently: I do not believe in this Congress; its performance will be nothing else but a thrashing over of old straw, in which there is not a grain left. I hope you will pardon the frankness, or perhaps bluntness with which I express my feelings on this subject. I mean no offense, and I repeat only what I have declared, in and out of season, from the very first moment, when the question of a leprosy congress was mooted. In fact, it was Dr. Goldschmidt and I who first suggested it, but not in the form which it takes in your own project. We did not care for "information as exact as possible on the distribution and geographic extension of leprosy." What we wanted is expressed in one word, *isolation*. Very truly yours,

ALBERT S. ASHMEAD, M.D.

West Virginia Law Amended.

PARKERSBURG, W. VA., March 17, 1897.

To the Editor:—In the JOURNAL of June 8, 1896, I gave a brief history of a suit for damages for malpractice, calling especial attention to the ruling of the trial judge, in denying the defendants from testifying in their own behalf in regard to any personal transaction or communication had with the deceased, whose death it was alleged, ensued because of malpractice by the defendants. The continuance of that history is, that the plaintiffs abandoned the case and allowed a decree of non-suit to be entered, thus ending the suit. The matter was brought up in the last meeting of the State Medical Society, held in Wheeling, June, 1896, and a committee appointed to ask the legislature to change the law, so as to allow a physician sued for damages arising from the death of a patient through alleged malpractice, to testify in his own behalf as to treatment used. This winter, through the efforts of this committee, aided by the counsel and votes of several physicians, members of the legislature, the law was amended. The act as passed is as follows: Section 23 of chapter 130 of the Code of West Virginia be amended and re-enacted to read as follows:

"Sec. 23. No person offered as a witness in any civil action suit or proceeding shall be excluded by reason of his interests in the event of the such action or proceeding or because he is a party thereto, except as follows: No party to any action, suit or proceeding, nor any person interested in the event thereof, nor any person from, through or under whom any such party or interested person desires any interest or title by assignment or otherwise, shall be examined as a witness in regard to any personal transaction or communication between such witness and a person at the time of such examination deceased, insane or lunatic against the executor, administrator, heir-at-law, next of kin, assignee, legatee, devisee or survivor of such person; or the assignee or committee of such insane person or lunatic. But this prohibition shall not extend to any transaction or communication, as to which any such executor, administrator, heir-at law, next of kin, assignee, legatee, devisee, survivor or committee shall be examined on his own behalf, nor as to which the testimony of such deceased person or lunatic shall be given in evidence. (Amendment) Provided, however, where an action is brought for causing the death of any person by wrongful act, neglect or default, under chapter 130 of the Code, the physician sued shall have the right to give evidence in any case in which he is sued, but in this event he can only give evidence as to the medicine or treatment given the deceased or operation performed, but can not give evidence of any conversation had with the deceased."

Passed the legislature February 22, and signed by the Governor the same day, to go into effect ninety days from date.

As a statute stands in a number of States similar to the one from which our professional brethren suffered, and which has been thus amended, it would be wise for the profession to see that similar amendments be passed, so as to prevent any smart

lawyer raising this point, and any technical judge giving a similar ruling that would prevent the physician defendant testifying in his own behalf, in a suit for damages arising from death of a party from alleged malpractice on part of defendant physician.

There is another gratifying thing about the ending of this case in the fact that the profession had influence enough with our law makers to have them make the needed change.

Respectfully, W. H. SHARP, M.D.

The Insidious Advertisement.

PHILADELPHIA, March 20, 1897.

To the Editor:—Probably no one knows better than a medical editor that eternal vigilance is the price of other things beside liberty; and nowhere is vigilance more essential than in guarding against the schemes of the manufacturer of proprietary preparations. The JOURNAL, with its settled and well understood policy of refusing reading notices, offers an attractive field in which to spread advertisements disguised as regular scientific communications.

Many of the weekly medical journals of the Eastern cities and Europe, lend their aid to such schemes, some of them, perhaps, by inadvertence, others apparently with full intention. But this will not justify the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in lowering its standard of requirements in the least. It is perhaps impossible to judge when the eulogy of a special preparation is entirely sincere on the part of a writer, whose judgment and originality may be unequal to his ambition to write; and when it is pure fake, gotten up for a fixed price, or in the hope that the wide circulation the manufacturer will give to reprints will prove a step toward fame (?) or fortune to the writer. But it really is not necessary to go into this question of motives. When an article shows marked enthusiasm for a new drug, the extended use of which will benefit a particular manufacturer, it must be regarded with suspicion, and if in other respects it seems of little importance the safe rule is to return it with thanks—thanks for the fact that we have not been caught by it.

It has seemed to me that in two or three recent instances good opportunities for indulging in such thankfulness have been missed, and that articles have appeared in the JOURNAL that are liable to bring a crop of such concealed reading notices regarding other patented or proprietary preparations. Of course it is very hard to refuse some member of the ASSOCIATION, who thinks he has discovered a good thing and wants it published in the JOURNAL, not recognizing that the source of his discovery was the plausible talk of the glib agent who left him the sample. This being the case, the members of the ASSOCIATION ought to make it as easy for you as possible to refuse such communications, by calling attention to them and expressing the general feeling through the columns of the JOURNAL. Even the vigilance of the editor will relax, or prove insufficient unless it is actively supported by the sentiment of the ASSOCIATION. Therefore I write to express to you my opinion of the articles in question, which need not be further advertised here, but which are named on the accompanying slip, and to ask others who notice what seem to be delinquencies of the sort, to pursue a similar course, and not to allow the unity and influence of the ASSOCIATION to be undermined by secret criticism and dissatisfaction.

Cordially yours, EDWARD JACKSON, M.D.

The Physio-Medical School?

NORTH EAST, PA., March 15, 1897.

To the Editor:—Can you give through the columns of your valuable JOURNAL a short history of what is known hereabouts as the physio-medical school of the practice of medicine. I would like to know something as to its origin, wherein it differs from the Regular, how many colleges it has, and as to what States recognize it as a *separate school*, and especially as to whether any State law names a physio-medical practitioner as one of the legal examiners for that school upon any State Medical Examining Board?

This may seem to be a long string of wants, but I am anxious to have it answered, as I see you are in the business of exposing humbugs.

The following is my reason for asking you for the above information. We have near here a physio-medical practitioner who has never been before our State Board, and is not registered. He has been cited before the Board, but refuses to go on the ground that there is no one on the Board of his particular school to examine him. The State Board notified him to cease his illegal practicing, but so far he has taken no notice of their warning. Our society has now taken the matter in hand and has him under bonds for court. He proposes to fight on the ground that his school is not recognized by the State, and hence he is not answerable to its law. He claims to have been before the Illinois Board and to be registered in Cook County. Hence my question: Has the Illinois Board a physio-medical man as one of its members, and is that school thus recognized by the State law? By giving a short history in the JOURNAL you will greatly oblige a subscriber.

B. H. PUTNAM, M.D.

A Revival of the Kansas Case.

MILWAUKEE, WIS., March 22, 1897.

To the Editor:—In your issue of the 20th inst., you speak of the "Kansas Hypnotism Case" and say that it was "one of the first in which the plea of hypnotic influence had been employed by the prosecution in the criminal courts." In the JOURNAL for June 8, 1895 (p. 903) you published a letter written by me in which the points discussed in the supreme court of Kansas were quoted and the law journal in which the case first appeared was named. It was then shown that the supreme court had nowhere, in its summing up of the testimony, mentioned the subject of hypnotism. Soon after the publication of this letter, some magazine, which I can not now recall, published an interview with the trial judge of the case; and he rather emphatically denounced the story that the plea of hypnotism was entertained by his court, and said that it was the work of a sentimental reporter. The only basis for the story was the fact that McDonald's lawyer in speaking of the influence that Gray held over him (McDonald) said: "This influence was so great that one might almost say it was hypnotic."

J. M. MADDEN, M.D.

Muscular Dystrophy.

PHILADELPHIA, March 15, 1897.

To the Editor:—I am desirous of learning of the occurrence of muscular dystrophies, including pseudo-hypertrophic paralysis, idiopathic muscular atrophy, Erb's juvenile (scapulo-humeral) atrophy and facio-scapulo-humeral (infantile) atrophy of Landouzy-Dejerine, in colored persons and especially in those of pure, unmixed African parentage. I shall be grateful to receive information from any one who has encountered or has knowledge of cases of this nature. Respectfully,

AUGUSTUS A. ESHNER, M.D.

224 South Sixteenth St.

The Journal Train.

PURCELL, IND., March 20, 1897.

To the Editor:—Will you kindly state in next JOURNAL the exact date the JOURNAL Train will leave Chicago, over what road, the rate for round trip from there, time limit at Philadelphia, and must passage be engaged in advance for that train. Very respectfully, MILTON MCMURTRY, M.D.

ANSWER: The JOURNAL Special Train will leave by the Penn-

sylvania R. R., from Chicago, Sunday May 30. The rate is that of one and one-third on the certificate plan. This has been granted for all roads east of the Mississippi river, and application is pending for the reduction west. Passage should be engaged in advance. Efforts are being made to extend the time limit, but so far without success.

"The History of Medicine, Etc.," by William Hamilton.

MILLEDGEVILLE, IND., March 11, 1897.

To the Editor:—Could you tell me where a copy of "The History of Medicine, Surgery and Anatomy from the Creation to the Commencement of the Nineteenth Century," by Wm. Hamilton, could be found? and oblige J. S. SHIELDS.

ANSWER.—This work was published in London, 1831, by H. Colburn and R. Bentley. You will doubtless have to procure it through your dealer at second hand.

PUBLIC HEALTH.

The Plague at Bombay.—The total number of cases up to March 11 is 9,032 and 7,546 deaths have resulted. In the whole presidency, to this date, there have been 14,856 cases of the plague reported, and 12,204 deaths have been recorded.

Sanitation at New York Harbor Against the Plague.—The act providing a special fund of $5,000 for Health Officer Doty's use at the quarantine station in New York harbor, and to provide the means of preventing the introduction of the plague into that port, has received the governor's approval and is now a law.

Family Epidemic of Non-Genital Syphilis.—A young girl was infected genitally and soon had a "bad mouth," which was communicated to her four brothers and sisters, who were all affected in and around the mouth. A child taken in to nurse was also infected and transmitted the infection to its mother *per mamillam*, thus infecting a second family, and an older child visiting the first family also infected its parents on its return home. Gebert, who reports the circumstances, adds that there may have been still further infection that escaped his observation.—*Cbl. f. Chir.*, February 6, from *Berl. kl. Woch.*, No. 41.

Physical Examination of the Proposed Bride and Groom.—An ardent sanitarist is a member of the Texas Legislature this year, and he has prepared a bill that he thinks will greatly benefit his fellow-citizens. The bill, if passed, will revolutionize the marriage license system of the State. The intending groom must previously undergo a thorough physical examination at the hands of a competent medical practitioner in good standing, and be possessed of said physician's sworn certificate of physical soundness. The prospective bride must also have undergone a similar ordeal and a like certificate in her behalf must be submitted. Not only this, but both parties "to the contract" must file sworn statements attesting the fact that neither of them are subject in a hereditary way to any disease that might in like manner transmit tendencies thereto in their probable offspring. The county clerk must then satisfy himself that these "credentials" are perfect before granting the license to marry. Should he give it without having these evidences of "fitness" presented to him, he would be held criminally liable.

Fish Diet and Leprosy.—In the November issue of the *Sei-i-Kwai Medical Journal* is published a translation of an article on the inoculation of leprosy by Dr. Hansen of Bergen, which introduces a new feature into Mr. Hutchinson's theory of the close connection of fish diet with leprosy. The author says: "I do not think that there is any choice given to the bacteria of leprosy as to localization, just as there is none in the tubercle bacillus. They develop wherever chance has deposited them and wherever they find favoring conditions and no obstacles, for example, on the outside of the arm where there is little muscular movement. On the exposed portions of the body, oxygen retains and feeds them. The inoculation by insects can only be successful in these places; in others, circumstances are too much against them. An internal inoculation is also easily imaginable and even probable. Salt fish is eaten all over the world; raw fish is eaten only in some countries, like Japan. Fish, especially the carp, which is so general an alimentation in Japan, where it is eaten raw and even alive, feed on the larvæ of mosquitoes, and may be suspected of communicating the spores of disease extracted by the insects from the exposed parts of diseased bodies. If not, however, spores, then the toxins of the bacilli. In reflecting, then, upon these points, I should be disposed to conclude that external leprosy inoculation means tubercular leprosy, and internal inoculation anesthetic leprosy." These observations are of much interest, and to leprologists generally they will probably be quite new. So far as we know, they afford a reasonable explanation of the fish-diet theory as a cause of leprosy, of which Mr. Hutchinson has been the stanch but almost only consistent advocate.—*London Medical Press.*

Professor Koch's Work in South Africa.—Professor Koch's investigation of the cattle plague in South Africa forms the subject of a recent article in the *Norddeutsche Allgemeine Zeitung*. One of the first places which he visited after arriving in the colony was the leper asylum on Robben Island in Table Bay, and he is said to have expressed his satisfaction with the general arrangements of the establishment, as well as with the bacteriologic work accomplished in the laboratory. The party included representatives of the colonial government, the German consul-general and several medical men. On December 3 he left for Kimberley, where the principal part of the work of investigating the cattle plague will be undertaken. He was accompanied by his assistant, Dr. Kohlstock, and also by Dr. Turner, a medical officer of the colonial government. It was arranged that a laboratory should be fitted up at a farmhouse about two miles from the town and whilst the requisite alterations were being made, Professor Koch went to Taungs, a town in the Kaffir country about two hundred miles from Kimberley, where more than twenty thousand head of cattle have died from the epidemic, so that there was abundant opportunity of observing the disease, of performing necropsies, and of collecting morbid specimens. On December 8 the party returned to Kimberley, where the laboratory was then in working order, and eight animals were inoculated with infective material brought from Taungs. The inoculations were made in the mouth and nose, every precaution being taken to ensure isolation and to guard against any accidental extension of the disease in the Kimberley district. One of the inoculated animals very soon died with symptoms of cattle plague, and the pathogenic material obtained from it was used for the inoculation of a fresh series. Professor Koch is much pleased with the arrangements which have been made by the colonial authorities for facilitating his researches, and finds that everything has been done to render his visit agreeable. The foregoing particulars have only appeared in an ordinary newspaper; a far more detailed and satisfactory account of the cattle plague inquiry will no doubt be communicated to the medical press on the return of Professor Koch and his assistants. The German government has requested him to visit Bombay for the purpose of investigating the bubonic plague.—London *Lancet*, February 13.

Chickenpox is not a Trivial Disease.—There are text-books on the diseases of children that teach an unfailingly favorable prognosis for varicella and an absence of all complications and sequels. In the last twenty years, however, a certain number of grave cases, even those terminating fatally, has been recorded,

sufficient to call in question the correctness of the above teaching. That chickenpox is the mildest of all infections is undoubtedly true, but experience teaches that it is not absolutely harmless and trivial. The fact that the disease is so generally mild is apt to foster an over-confidence in the result, and to lead to a less careful supervision of treatment than is demanded by every infection, no matter how trivial its manifestations. In 1884, Henoch published four cases of varicella complicated with nephritis, one of which terminated fatally, and since then similar cases have been reported by many observers, including Hoffmann, Augier, Newski, Rasch, Rachel, Vichmann, Schwab, Hagenbach, Demme, Unger and Högyes. Högyes and Hagenbach each report a fatal case. Pesa, in an outbreak of twenty-six cases of varicella, noted nephritis as a sequel in two of them. Cassel records six cases in an epidemic of twelve occurring in Berlin, in which nephritis developed during the stage of vesication. Three of these cases died, one directly from the nephritis and the other two of pneumonia. These reports emphasize the importance of repeated urinary examinations in all infections, even in varicella. Jonathan Hutchinson (*Medico-Chirurgical Transactions*, vol. xv, 1892) was the first to call attention to a complication of varicella characterized by the development of gangrene of the skin at the site of the vesicles. He termed the condition varicella gangrenosa, and since the appearance of his paper numerous European observers have reported similar cases. At least four of them have been reported in America, one each by Woodward, Büchler, Spivak and Griffith. Dr. Griffith's case was complicated also with diphtheria and rubella, and is reported in the *University Medical Magazine* for August, 1896. Paralysis is a rare sequel of varicella. Gay (*British Medical Journal*, March 31, 1894) reports a case of peripheral neuritis following varicella, and a case of paraplegia of spinal origin is reported by Marfan. Boucheron (*La Presse Médicale*, Feb. 17, 1894) first drew attention to varicellous affections of the larynx, bronchi and lungs. "Certain cases," he says, "show that not only stomatitis, but laryngitis, bronchitis and broncho-pneumonia and, perhaps, even pleurisy may be of a varicellous nature." He narrates the history of a little girl who was seized with varicella and died about the twentieth day in consequence of laryngeal spasm. At the necropsy nothing was found to explain the spasm except vesico pustules on the laryngeal mucous membrane similar to the cutaneous eruption. Marfan and Hallé (*Revue Mensuelle des Maladies de l'Enfance*, Tome xiv, No. 1) report two cases somewhat similar. The first recovered after tracheotomy had been performed, the second died on the eighth day of broncho-pneumonia. The autopsy in the latter case revealed on the right lower vocal cord an ulcer the size of a lentil. The authors remark that the laryngeal lesion of varicella usually appears early, either at the onset or very shortly afterward. This fact is an aid in differentiating from laryngitis due to secondary infection, although only a bacteriologic examination can justify the exclusion of a coexisting diphtheria. Otitis media, noma and orchitis have been reported as following chickenpox. In addition to local complications, varicella occurring as a primary affection may, by lowering the resisting powers of the subject, invite the development of other infections; thus measles, rubella, diphtheria, scarlet fever and whooping cough have each been found in connection with this disease.—*University Medical Magazine.*

Extra Pay for Health Officer During Epidemic.—When an epidemic of smallpox broke out in the village of St. Johns, Mich., in October, 1894, the board of health, being the trustees of the village, increased the pay of the health officer, one of its members, $10 a day over and above his annual salary of $100. The village audited, and presented to the board of supervisors of the county, a bill of expenses incident to the smallpox, which included among its items $690 for sixty-nine days' services rendered by its health officer at the increased compensation, which the board refused to pay. This was followed by the village filing a petition for a mandamus to compel payment. Counsel for the board of supervisors contended that the board of health could not fix the compensation of one of its members, and thus bind the county for the payment of the amount so fixed. And the supreme court of Michigan says, Village of St. Johns v. Board of Supervisors of Clinton County, Feb. 8, 1897, that it should doubt the power of the board of health to fix conclusively the amount of the claim of its health officer, did it appear that he took part, as a member of the board, in fixing his own compensation, and the board of supervisors were contesting the claim upon the ground that the amount fixed was excessive. But here it was agreed that the charges were reasonable for the services performed, and that the persons who were sick with the smallpox, and all others liable for their support, were unable to pay the same, or any part thereof. And while the health officer was a member of the board of health, there was nothing in the record to show that he took any part in the proceedings to fix his compensation. Under such circumstances, the court does not agree in the contention stated, but holds that the village was entitled to recover the amount in question from the county, and affirms an order granting the writ of mandamus. Moreover, while the boards of health of townships, cities and villages are required to fix and pay the ordinary services of the health officer, yet it is apparent, the court holds, that it was the intention of the legislature of Michigan, by the various provisions of the statute, to cast the burden upon the county for extraordinary services rendered to prevent the spread of contagious diseases, and for the care of indigent persons afflicted with such disease.

Tuberculosis and Health Department Regulations at New York.—According to the *Medical Review* for February, the proposal of the health authorities of New York City to require reports of all cases of pulmonary tuberculosis, has excited much interest and comment among physicians as well as patients. We can not withhold our sanction of any means that is practicable for limiting the spread of this disease, and yet can sympathize with the general feeling among medical practitioners that their position as medical adviser should be carefully guarded by the authorities, who, notwithstanding their supreme authority in sanitary matters, are still public servants, and as such subject to the behests of the popular will to some extent.

"We firmly believe that *all communications* relating to house disinfection, isolation of private patients, vaccination of other members of a family where smallpox has appeared, taking of cultures in suspected diphtheria and reporting on the same to the family, should be done only through the family physician, and never under any circumstances by an employe of the Board of Health. In other words, the Department should be the *consultant* in all cases, and never assume to be the *attendant*. In that manner, and in no other, can the confidence of the rank and file of the profession be preserved, without whose coöperation the most necessary rules and regulations of the health officials can never be properly enforced. In any contest between the Board and the people the latter are sure to win, and such conflict must be avoided by a careful consideration of all phases of the question under discussion."

The above is of interest, as it is an editorial of a journal, one of whose editors is also prominent in the councils of the State Board of Health, and indicates the limit and extent of the support that the City Board of New York may expect in its fervently criticised campaign against tuberculosis. The New York County Medical Society will at its March meeting discuss a report on the same subject, and having a very similar tenor; it is believed that that Society will adopt the sentiments of the following report of its Committee on Hygiene:

"Realizing the need of proper measures to prevent the spread of pulmonary tuberculosis, and regarding it as an essential preliminary that all physicians be impressed with the importance of making an early diagnosis of the same by microscopic examination of the sputum, we earnestly recommend

that physicians avail themselves of the offer of the bacteriologic department of the Board of Health to make such examinations. We approve of the compulsory reporting of cases of pulmonary tuberculosis, if the inspectors are forbidden to visit or to have any communication with the patients without the consent of the attending physician, believing that the attending physician is capable of giving all the necessary instructions."

The *British Medical Journal* urges that "for the present a campaign of education only is in keeping with the temper of the profession; a marked disinclination exists on the part of many medical men toward any interference on the part of the sanitary authorities with their treatment of tuberculous patients. It must be borne in mind that medical practitioners have it in their power to render inoperative any procedure which meets with their general disapproval."

A "White City" for our Consumptives.—Dr. A. Walton, in the *Boston Medical and Surgical Journal*, March 4, holds that it is the duty of every one of the United States to have its own retreat for consumptives at some point to be agreed upon in the far West. "That it would be a simple matter to entirely stamp out pulmonary tuberculosis by the removal of all such cases to a dry atmosphere in a high altitude, no one who has ever visited Colorado, New Mexico or California can have failed to observe. The wonderful curative influence that high altitude has upon persons suffering from pulmonary tuberculosis is known to every well-read physician throughout the land. I have time and time again conversed with men of wealth, prominent in the affairs of Colorado and New Mexico, who only a few years ago were taken into that country in a condition of extreme emaciation, almost ready to die, suffering from the last stages of pulmonary tuberculosis. Today these men have not only gained health, but are robust, of large stature, giants in strength and strong in intellect. I would suggest that there be established somewhere in the State of New Mexico or Colorado a national home for consumptives. I can picture to myself a beautiful city—something similar to the former 'White City' of Chicago—where each State will have its State home. The population of this city, based on the present annual death rate of persons suffering from pulmonary tuberculosis, would be between 300,000 and 500,000 people. From conversation with prominent men in Massachusetts, where consumption is rampant, I am led to believe that the State of Massachusetts would infinitely prefer to have a consumptive State home some place where there was a possibility that at some time there would be an end to the enormous expense incident to carrying on a consumptive home within its own borders, where they now have such an institution, which is merely the last resting place of the persons who are received there. People do not go there to be cured; they are supported by the State until such time as death ends their sufferings. If it can be shown that after a certain period of time the expense of maintaining a State home in a section of country where, and under such conditions, a large percentage of those sent to the home will be cured, would not that be a better plan to adopt than the plan of establishing large hospitals within the limits of the State, which would become, under conditions existing here, the merest makeshift and in no way curative? I firmly believe that our national representatives would be perfectly willing to take this matter in charge—to allot or assign a certain number of acres of public land immediately adjacent to the foothills, say at an elevation of about 4,000 feet, at a point to be selected by a commission to be appointed by Congress. We have plenty of public land available for the purpose not far from the great trunk lines and within sufficient proximity to the foot hills of the Rocky Mountains to make the matter of irrigation perfectly practicable and with the expenditure of but little money, as convict labor could be employed in bringing the water down from the mountains, which has been done with one of the irrigating systems now being operated in Colorado. If the full import of this matter were properly placed before our national legislators there can be no question but that a commission would be appointed for the purpose of looking into the question and investigating the proper site for the establishment of such a national home. I believe there will be no difficulty in having this matter taken up and properly carried through, for it must appear perfectly apparent to every right-thinking man that we owe it to ourselves and to our families that we should protect ourselves from the possibility of infection from one of the most fatal of all diseases."

The "Cow Penitentiaries" of Large Towns and Cities; the Stable a Kind of Winter Garment.—Dr. August Richter is, we believe, the originator of the expressions "cow penitentiaries" and "cow dungeons" as applied to those miserable milk-producing establishments that infest the environs of nearly all large towns. Dr. Richter dwells at Williamsport, Pa., where the cow is reckoned a noble animal, having the right to cleanly treatment just as horses and babies. It is, he believes, largely because the cow is evilly treated that she takes on consumption. Dr. Richter, in *Public Health*, says: "Come with me, my friends, to the stable, which is, properly speaking, a *garment* for our domestic animals and should not only be protective but sanitary also. But how do we find them? The majority are deficient in light, ventilation and general cleanlinesss, with low ceilings, ornamented with abundant cobwebs, dust and rubbish. The whole interior is dark like a dungeon. Broken windows, nailed-up ventilators and all the pure air that possibly could enter enters when opening the stable door. The air within such a stable is foul and stifling. In one of these 'cow penitentiaries' were crowded together over ninety animals, most of them full-blooded Holstein, all hanging in stocks or in movable stanchions for month after month, without an hour's release, without a handful of bedding, fed on decomposing glucose, refuse full of maggots. Every year some of these noble creatures perished from consumption, yet the ignorance and cruelty of the proprietor made no change in the treatment of his suffering herd. It is the ignorance of men and insanitary keeping of the stock that brings about consumption in cows. It is fallacious reasoning of farmers to think they can farm and run a dairy also; unless they have proper help they certainly will fail, for no man can serve two masters at one and the same time. The modern doctor is not asked so much what will cure a disease, but what will prevent it—which is the great study of the sanitarian. It has been demonstrated that all contagious diseases are preventable diseases, and therefore chargeable with criminal offence, whether they kill the human or the bovine family. Ask any one of the dairy men the question: 'How many cubic feet of pure air are required per hour for each cow for healthy respiration?' Can they answer the question? Certainly not; yet a child requires 3,500 cubic feet per hour for the healthy performance of that function. Think and reflect ye dairymen what damage you inflict upon the poor animals in filth-reeking, damp, low-bank barn, without a thought further than how many can be placed in the barn. How much milk can we strip from them? Verily, it is a wonder that all the animals have not become tuberculous, for almost two-thirds of the year they are forced to breathe foul air either in the stable or the barnyard. When will man learn to consider life in its true light? When will his mercy provide for every creature under his care a sanitary home? The stable for dairy cows should be cleared twice a day, morning and evening, unless the animals are kept under the shed in the barnyard during the day, when the stable remains clean. After a thorough morning cleaning of the stable every door should be opened and kept so for general floor ventilation; let the stable master apply over every wet spot in the stands and rear of them either air-slacked lime or gypsum to exclude the air from acting on the moist surfaces, for dryness prevents chemic action and the stable air will remain pure through one of the above applications. The stable work being done and every stand supplied with bedding, then let the currycomb and brush be thoroughly applied to every cow until their bodies are thoroughly clean. Cleanliness is as essential to the health of cows as it is to horses or human beings." Would that our female reformers and our anti-cruelty people might find an outlet for their energies in the protection of that noble and innocent female, the cow, which often treated more harshly than any human criminal, might be taken as the emblem of patience. The cow is unwittingly, therefore unwillingly, the dispenser of tuberculous milk to the human infant, innocent also; and this is a second call to duty to our would-be reformers to adjourn the question affecting the guineapig of the laboratory and men who expectorate, for that of those precious animals—the cow and the baby. But no, it may not be expected; they have laid out their course and will prefer to fritter away their time and strength on antivivisection bills and the like. Let us imagine for a moment that all the women of the land having taste and ability for public affairs should spend a part of their spare time in the inspection of cow stables, what good might not be done; how much of advantage to their own health and that of the human beings near to them, whose claims to their humane attention are not always scaled up to their deserts. The abolition of the "cow penitentiary" will possibly have to be effected without their aid and comfort.

ASSOCIATION NEWS.

Section on State Medicine.—Members of the Association desiring to read papers before this Section will please send in their names and titles of papers to Dr. Elmer Lee, Chairman, 103 State Street, Chicago, or to Dr. Louis Faugères Bishop, Secretary, 30 W. 36th Street, New York. The Section officers will be pleased to receive a few more papers before the completion of a very scientific and instructive program.

Section on Ophthalmology.—The following papers will be presented to this Section at the next meeting of the AMERICAN MEDICAL ASSOCIATION.

1. Address of Chairman, G. E. de Schweinitz, Philadelphia, Pa.
2. The Roentgen Rays in Ophthalmic Surgery, Howard F. Hansell, Philadelphia, Pa.
3. The Localization of Foreign Bodies within the Eye by Means of Roentgen's X-Rays. An Experimental Research. William Sweet, Philadelphia, Pa.
4. The Electro-magnet of Haab in the Removal of Pieces of Steel from the Interior of the Eye. J. E. Weeks, New York, N. Y.
5. Shot-grain Wounds of the Eye. Lewis H. Taylor, Wilkes-Barre, Pa.
6. Gun-shot Wounds of the Eye. Charles Stedman Bull, New York, N. Y.
7. Effect of Explosives on Eyes. John Chase, Denver, Colo.
8. In What Cases and When to Enucleate in Injuries of the Eye. John M. Foster, Denver, Colo.
9. When Evisceration is Preferable to Enucleation. J. C. Dunlavy, Sioux City, Iowa.
10. Implantation of a Glass Ball for the Support of an Artificial Eye and Mule's Operation for the Substitution of Enucleation of an Eyeball. L. Webster Fox, Philadelphia, Pa.
11. Experiments on Rabbits' Eyes to Obtain an Elastic, Unbreakable Vitreous Body after Evisceration of the Eyeball. Albert Pick, Hyannis, Mass.

Five ten-minute papers, the subjects suggested by the Executive Committee, and bearing the following titles:

12. Bacteriology of the Conjunctiva and the Best Methods of Preparing this Membrane Preparatory to Operations Requiring Corneal Section. Robert Randolph, Baltimore, Md.
13. Best Methods of Sterilizing Ophthalmic Instruments and Solutions of Myotics and Mydriatics. E. A. de Schweinitz, Bio-Chemic Laboratory, Department of Agriculture, U.S.
14. The After-treatment of Cataract Cases, with special Reference to the Use of Germicides. J. A. White, Richmond, Va.
15. Best Methods of Preparing Dressings for Cataract Cases and their Character and Composition. Casey A. Wood, Chicago, Ill.
16. Concerning Astigmatism following Corneal Section. Edward Jackson, Philadelphia, Pa.

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17. Statistics of Cataract Operations, with Comments. Herman Knapp, New York, N. Y.
18. Cataract Complicated with Chronic Conjunctivitis. W. T. Montgomery, Chicago, Ill.
19. Treatment of Glaucoma with Special Reference to Iridectomy and Constitutional Measures. Dudley S. Reynolds, Louisville, Ky.
20. Massage of the Eyeball as a Therapeutic Measure in Glaucoma. George M. Gould, Philadelphia, Pa.
21. Secondary Glaucoma. S. D. Risley, Philadelphia, Pa.
22. Affections of the Eye Resulting from Profuse Hemorrhage. Harry Friedenwald, Baltimore, Md.
23. Angio-Myxoma of the Orbit, with Report of a Case. S. C. Ayres, Cincinnati, Ohio.
24. Some Cases of Orbital Disease. B. Alex. Randall, Philadelphia, Pa.
25. Abscess of the Orbit. J. F. Fulton, St. Paul, Minn.
26. Cavernous Tumor of the Lid with Extensive Conjunctival Involvement. G. Oram Ring, Philadelphia, Pa.
27. Melano-sarcoma of the Conjunctiva, with the Report of a Case. A. R. Baker, Cleveland, Ohio.
28. Primary Sarcoma of the Iris. A Statistical Study, with the Report of a New Case. C. A. Veasey, Philadelphia, Pa.
29. Certain Anomalous Conditions of the Iris. W. Campbell Posey, Philadelphia, Pa.
30. Questions about Corneal Suppuration. H. B. Young, Burlington, Iowa.
31. The Use of Cauteries in Ulcers of the Cornea. B. L. Millikin, Cleveland, Ohio.

Five five-minute papers, the subjects suggested by the Executive Committee, and bearing the following titles:

32. The Surgical Treatment of Trachoma, with Special Reference to Expression and Grattage. John E. Weeks, New York, N. Y.
33. A Comparison of the Value of the Local Medicinal Measures in Treatment of Trachoma. H. V. Würdemann, Milwaukee, Wis.
34. The Present Status of Jequirity in the Treatment of Trachoma. W. Cheatham, Louisville, Ky.
35. The Treatment of the Complications of Trachoma, with Special Reference to Malposition of the Lid Borders. F. C. Hotz, Chicago, Ill.
36. The Hygiene of Trachoma and the Relation of Altitude and Climate to Its Development. Swan M. Burnett, Washington, D. C.

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37. Ten Years with the Surgical Treatment of Trachoma. Harold Gifford, Omaha, Neb.
38. Observations on Trachoma. J. Elliott Colburn, Chicago, Ill.
39. Relative Frequency of Trachoma in Southern California. H. Bert Ellis, Los Angeles, Cal.
40. Hyperplastic Sub-conjunctivitis. H. McI. Morton, Minneapolis, Minn.
41. Credé's Method in Public Institutions. Lucien Howe, Buffalo, N. Y.
42. Value of Colored Test Glasses for the Detection of Anomalies of the Ocular Muscles. F. B. Eaton, San José, Cal.
43. A Combined Phorometer and Duction Indicator. A. E. Prince, Springfield, Ill.
44. Practical Points in Muscular Insufficiencies. Clark V. Hawley, Chicago, Ill.
45. Clinical Study of Hyperphoria, with Cases. John T. Carpenter, Jr., Philadelphia, Pa.
46. Amblyopia of Strabismus. C. M. Hobby, Iowa City, Iowa.
47. Amblyopia Exanopsia. A. C. Simonton, San José, Cal.
48. Amblyopia Exanopsia. Leartus Connor, Detroit, Mich.
49. Report of the Examination of the School Children's Eyes in the City of Minneapolis. Frank Allport, Minneapolis, Minn.
50. Asthenopia from Vicious Working Point. C. H. Thomas, Philadelphia, Pa.
51. Apparent distortion of Objects after Correction of Astigmatism. A. A. Hubbell, Buffalo, N. Y.
52. Lenticular Astigmatism. G. E. Dean, Scranton, Pa.
53. Studies in the Comparative Anatomy and Etiology of the Eye. Flavel B. Tiffany, Kansas City, Mo.
54. Horizontality of Vision in Relation to Certain Cranial Characteristics. George T. Stevens, New York, N. Y.
55. Observations with the Binocular Lens for the Examination of the Eye by Oblique Illumination. Edward Jackson, Philadelphia, Pa.
56. Congenital Opacities of the Cornea. Wendell Reber, Philadelphia, Pa.
57. Embolism of the Central Artery of the Retina. C. F. Clark, Columbus, Ohio.
58. Anomalies of the Retinal Pigment Epithelium and their Clinical Significance. Henry Gradle, Chicago, Ill.
59. Method of Employing Kangaroo Tendon in the Operation of Tendon Advancement, with Cases. John O. McReynolds, Dallas, Texas.
60. A Report of Thirty Cases of Cataract Extraction. Louis F. Love, Philadelphia, Pa.
61. An Improved Skiascope. J. Ellis Jennings, St. Louis, Mo.
62. Exhibition of a New Ophthalmoscope. John W. Croskey, Philadelphia, Pa.
63. Exhibition of Other New Instruments.

SOCIETY NEWS.

German Surgical Association.—The next congress of this Association will meet at Berlin, April 21 to 24. The addresses will be on Surgical Treatment of Gastric Ulcers, Use of the Roentgen Ray in Surgery and Operative Treatment of Hypertrophied Prostrate.

American Medical Publishers.—The fourth annual meeting of the American Medical Publishers' Association will be held in Philadelphia, May 31, 1897 (the day preceding the meeting of

the AMERICAN MEDICAL ASSOCIATION). Members desiring to present papers will kindly send the titles of the same as early as possible to CHAS. WOOD FASSETT, Secretary, St. Joseph, Mo.

Medical Society of the State of West Virginia.—This Society will hold its thirtieth annual meeting at Charleston, W. Va., on Wednesday, Thursday and Friday, May 19, 20 and 21, 1897. All members are requested to prepare a paper and to send its title to the Secretary not later than April 24, so that the program can be completed in time. We should have a large meeting at the Capital City this year, as the Committee on Arrangements is doing everything in its power to make it pleasant for all. The usual reduced hotel and railroad rates will be granted. Program and further details will be sent two weeks before the meeting.

Missouri State Medical Association.—Present prospects are that the meeting of the Missouri State Medical Association, May 18, 19 and 20, is going to prove very satisfactory. The committees have all gotten to work early, which is a good indication. The Committee on Scientific Communications is already in receipt of titles in numbers and character sufficient to insure the program scientifically attractive. The Executive Committee are enabled to announce the following program, the details of which only remain to be completed. The Association will meet in St. Louis May 18, 19 and 20. All the first, the second and the third day until noon will be devoted to the scientific program. On the evening of the first day the Association will as a body attend a session of the Illinois Society in East St. Louis. On the evening of the second day the Illinois Society will attend as a body a session of the Missouri Association, after which there will be a banquet and reception. On the third day both bodies will adjourn and join a steamboat excursion on the river.

National Confederation of State Medical Examining and Licensing Boards.—The seventh annual meeting of this Confederation will be held in the small banquet hall of the Hotel Walton, at Philadelphia, Monday, May 31, 1897, at 10 o'clock A.M. The following program has been arranged: 1. Address of welcome by A. H. Hulshizer of Pennsylvania State Board of Medical Examiners. 2. Response by vice-president Reed. 3. Report of the committee on minimum standard of requirements. 4. Discussion and action thereon. 5. Report of the secretary and treasurer. 6. Annual address of the president. 7. Some practical experience with, and results of, the medical law of Pennsylvania. Wm. S. Foster, Pittsburg. 8. The need for exact information as to the equipment, methods and requirements of our medical schools. J. N. McCormack, Bowling Green, Ky. 9. Address by Prof. J. W. Holland, M.D., Dean Jefferson Medical College, Philadelphia. 10. Miscellaneous business. 11. Election of officers. 12. Adjournment.

The object of the confederation is to consider questions pertaining to State control in medicine and to compare methods in vogue in the several States; the collection and dissemination of information relating to medical education, and to consider propositions that have for their purpose advancement of the standards in the United States. A cordial invitation is extended to all members and ex-members of State medical examining boards, and to physicians, sanitarians and educators who are friendly to the objects named, to attend the meeting and participate in its proceedings.

Officers for 1897: President, Wm. W. Potter, New York; vice-presidents, Chas. A. L. Reed, Ohio; J. N. McCormack, Kentucky; secretary and treasurer, A. Walter Suiter, Herkimer, N. Y.; executive council, Jos. M. Mathews, Louisville; Wm. S. Foster, Pittsburg; Hugh M. Taylor, Richmond; Jas. M. Hays, Greensboro, N. C.

By order of the executive council.

WILLIAM WARREN POTTER, Pres.
A. WALTER SUITER, Sec'y.

Twelfth International Medical Congress, Moscow, Russia, Aug. 19–26, 1897. J. Klein, president; W. H. Roth, sec.-general.

American National Committee: J. S. Billings, M.D., New York; Frank P. Foster, M.D., New York; Claudius H. Mastin, M.D., Mobile; S. Weir Mitchell, M.D., Philadelphia; Charles A. L. Reed, M.D., Cincinnati; George B. Shattuck, M.D., Boston; F. J. Shepherd, M.D., Montreal; George F. Shrady, M.D., New York; W. S. Thayer, M.D., Baltimore. A. Jacobi, M.D., 110 W. 34th St., New York, Chairman.

In a letter dated Moscow, February 14, the Secretary General, Prof. W. K. Roth, communicates the following facts for the information of the American physicians who intend to participate in the Twelfth International Congress which is to be held at Moscow from August 19 to 26. The transatlantic steamship companies refuse one and all any reduction of the usual charges. In their replies, most of which are couched in courteous language (the original are in the possession of the undersigned), they admit the existence of a trust, or contract or agreement, which prevents them from lowering their prices; a few are so polite as to express their regrets. Reductions of fares on Russian railroads are expected shortly. The French, Spanish, Swedish and Hungarian railroads promise a reduction of 50 per cent.; so do the Italian for a distance of 500 kilometers, less (down to 30 per cent.) for shorter distances. The Mediterranean lines (Messagerie Maritimes, General Italian Navigation Company, Austrian Lloyd) grant from 25 to 50 per cent. The undersigned chairman is not authorized to issue certificates of any kind in favor of congressists. He will try to ascertain, however, in which way their movements may be facilitated, and may receive a reply in the second half of April. Extracts of papers to be read before any of the sections ought to reach the Secretary General before June 1 in order to be printed in the preliminary volume. A special prospectus containing the final details referring to traveling, lodging, festivities, etc., is promised for a near future. It will be communicated at once to the medical journals, and to the press of the country.

A. JACOBI, M.D.

New York, March 10, 1897.

REPORT OF THE PRELIMINARY WORK ACCOMPLISHED BY THE SECTION ON SURGERY.

[Translated for the JOURNAL.]

In response to the invitation addressed to them by the Presidents of the Surgical Section the committee announce that the following persons have consented to deliver the addresses introducing the subjects on the program (see the JOURNAL, January 23):

Dr. E. Braatz, Königsberg, "Therapeutics of infected wounds." The subject, "Methods of treating malignant tumors without operating," especially the results of serum therapeutics, will be discussed without an introductory address. Prof. E. Bergmann, Berlin, "Cerebral surgery in cases of tumor cerebri and Jacksonian epilepsy." Prof. T. Tuffier, Paris, "Surgery of the lungs, especially with regard to the formation of tuberculous cavities and pulmonary gangrene." Prof. Czerny, Heidelberg, "Therapeutics of cancerous strictures of the esophagus, pylorus and rectum. Success of the different methods." Prof. L. Ollier, Lyons, "Gonorrheal and syphilitic affections of the articulations." Prof. Dollinger, Buda Pesth, "Principles of the construction of bandages and protheses in tuberculous affections of the bones and articulations." (The subject as announced by the committee is: "Principles of the construction of protheses of the lower extremities in affections of the articulations, paralyses, congenital luxation of the femur and after amputations.")

The following persons have expressed their desire to address the Congress on these subjects or join in the discussion: Dr. Credé, Dresden, "My silver treatment of wounds;" Dr. Kousnetzov, Charkov, "Methods of treating infected wounds;" Dr. M. Preobragensky, St. Petersburg, "Treatment of infected

wounds, based on experimental data"; the same surgeon "Conditions of infection of wounds and means to prevent them, with the present operative processes current in the clinics of Europe."

The communication on the third subject on the program will be presented at the meeting held in common by the surgical section and the section of nervous diseases. The first address will be made by Prof. Bergmann, as stated above. The second address will be by Prof. Oppenheim, Berlin, on behalf of the nervous disease section. Subject, "Failures in cerebral surgery occasioned by incorrect diagnoses." Co-rapporteurs, Dr. Adenot, Lyons, "Tumor of the cerebral convolutions, Jacksonian epilepsy, trephining, marked improvement"; Dr. J. Lucas-Championnière, Paris, "Treatment of Jacksonian epilepsy by trephining"; Prof. Sachs, New York, "Surgical treatment of epilepsy"; Prof. Tauber, Warsaw, "Cerebral surgery in cases of tumors and Jacksonian epilepsy"; Prof. Socin, Basel, will also join in the discussion of this subject. Dr. M. Fabrikant, Charkov, "Surgery of the lungs, principally from the standpoint of the formation of tuberculous caverns and of gangrene of the lungs." Prof. A. Ceccherelli, Parma, "Strictures of the esophagus, pylorus and rectum"; Prof. J. v. Iterson, Leiden, "Treatment of cancerous strictures of the esophagus, pylorus and rectum. Results of the different methods of treatment." Dr. G. Jastrebov, Charkov, "Syphilitic affections of the articulations." Prof. Lorenz, Vienna, "Non-bloody reposition of congenital luxation of the thigh, with practical demonstration of the process on an older child"; Dr. Robin, Lyons, "Correction of club feet, particularly in the adult"; the same surgeon, "Correction of Anchylosis of the thigh."

Others have signified their desire to present communications on subjects not included in the regular program. These communications will be heard after the discussion of the questions on the program, if time will permit. The names inscribed up to the present are the following: Dr. J. Lucas-Championnière, Paris, "Treatment of fractures with naturally mobile fragments, without complete immobilization and with immediate massage"; Prof. Zabludowsky, Berlin, "Remarks on massage-therapeutics in surgery, based on observations in the Berlin University Clinic"; Prof. A. Tauber, Warsaw, "Surgical treatment of cerebral hernias and spina bifida, with results"; Dr. Ferd. Schultze, Duisburg, "Treatment of lupus of the face with radical extirpation and transplantation of a flap (Thiersch)"; Prof. Dollinger, Budapesth, "Further experience in subcutaneous extirpation of tuberculous lymphatic glands in the neck and submaxillary region"; Prof. Senn, Chicago, "On the uses of the omentum in surgery"; Prof. Roux, Lausanne, "On perityphlitis"; Prof. Djemil-Bey, Constantinople, "On the radical cure of hernia"; Prof. J. Lucas-Championnière, Paris, "Conditions for permanence of the results in the radical cure of hernia"; Prof. E. Bassini, Padua, "The results of my method of treating hernia and my experience"; Prof. O. Bloch, Copenhagen, "Resection of the renal substance for diagnostic purposes"; Dr. H. Milton, Cairo, "Demonstration of a large collection of vesicle stones and a communication concerning them"; Prof. Bottini, Pavia, "Treatment of ischuria, consecutive to hypertrophied prostate. Demonstration of a new accumulator and instruments for galvano-caustics"; Prof. Djemil-Bey, Constantinople, "Supra-condyle osteotomy." Others who have promised to participate in the work on the Surgical Section are as follows: Prof. Albert, Vienna: Prof. J. Ashhurst, Philadelphia; Prof. Duplay, Paris; Prof. Gussenbauer, Vienna; Prof. Lannelongue, Paris; Prof. LeDentu, Paris; Prof. Lennander, Upsala; Prof. Macewen, Glasgow; Prof. H. Morris, London; Prof. Ogston, Aberdeen; Prof. Péan, Paris; Prof. Rose, Berlin; Prof. Rydygier, Cracow; Prof. M. Schede, Bonn; Prof. Scriba, Tokio; Prof. Tillaux, Paris; Prof. Trendelenburg. Leipsig; Prof. Watson, Boston; Prof. Watson Cheyne, London. According to the regulations adopted by the Committee of Arrangements, the communications introducing the subjects for discussion on the program, will be published in full and distributed to the members of the Congress, if received prior to May 1. After that date, to June 1, only abstracts of them can be published.

Acting upon the suggestion of Dr. E. Braatz, Königsberg, the Section of Surgery has decided to collect international statistics in regard to narcoses during 1896, and announce the results at the Congress. For this purpose every physician is requested to reply to the following questions: 1, number of narcoses made during 1896; 2, anesthetic agent with which the narcosis was produced; 3, number of deaths in consequence of the narcosis. Notices of this request have been inserted in the medical journals. Physicians will please forward their communications in response to these questions to the Secretary of the Section, Dr. F. Rein, not later than June 1, 1897.

Presidents of the Section of Surgery: Prof. A. Bobrov, Moscow, Powarskaja, "Maison Postelniko"; Prof. L. Levchine, Moscow, Wolhonka, "Maison Mihalkov"; Prof. Th. Sinitzine, Woscow, Wolhonka, "Maison Wojeikov."

Secretaries of the Section: Dr. F. Rein, Moscow, Malaja Dmitrovka, "Maison Schechkov"; Dr. S. Derjuginsky, Moscow, Kalachskaja, Count Galitzin Hospital.

NECROLOGY.

FREDERICK W. BARTLETT, M.D., New York Medical College, 1854, an original Fellow of the New York State Medical Association, died at his home in Buffalo, N. Y.

CLARK WRIGHT, M.D., College of Physicians and Surgeons, New York, 1885, only son of the late Dr. Clark Wright, died in New York City, March 16. He was an active worker in the Vanderbilt Clinic and a Fellow of the New York County Medical Association.

SUMNER APPLETON MASON, M.D., University of Pennsylvania, 1868, died suddenly of an apoplectic attack at his residence in New York City, March 12, aged 58 years.

WILLIAM C. ROLLER, M.D., Jefferson Medical College, 1861, died suddenly at Hollidaysburg, Pa., March 11, aged 59 years. He was an ex-president of the Blair County Medical Society and at the time of his death was president of the local school board.

CHARLES PHYTHIAN, M.D., of Newport, Ky., died March 14, from tetanus, which developed from an attack of tonsillitis together with an alveolar abscess. Dr. Phythian was born in Newport in 1861 and graduated from the Medical College of Ohio in 1883, at which time he located in Newport and had enjoyed a large and lucrative practice ever since. The deceased leaves a widow, one child, and one brother, Dr. John Phythian, who is located in Newport.

MISCELLANY.

A Correction.—In a recent review of a book of Dr. R. Osgood Mason of New York on "Telepathy and the Subliminal Self," the name of the publisher through a typographical error was printed as Henry Holden Co., instead of Henry Holt & Co.

A New Medical Journal.—We have received a prospectus of a new medical journal from Biloxi, Miss., under the title of the *Medical Record of Mississippi*. The first number will be issued April 1. Dr. H. H. Haralson, the well-known quarantine officer, will be the editor.

Discretion Allowed as to Experiments.—Some discretion, the supreme court of Nebraska holds, in City of Ord v. Nash, Jan. 19, 1897, is conferred upon the trial court in receiving evidence

of experiments for the purpose of contradicting or corroborating other witnesses; and, in order to authorize the reversal of a judgment on account of the admission or rejection of such evidence, there must have been a clear abuse of discretion.

Should Appear that Expert Heard Testimony.—Where the opinion of an expert is asked upon facts not detailed in the question itself, but the witness is referred to the testimony of another for such facts, the supreme court of California holds, Howland v. Oakland Consolidated St. Ry. Co., Dec. 31, 1896, that it should appear that the witness had heard the testimony.

Admissible Expert Testimony.—Evidence of opinion in respect to the probable duration of physical suffering or disability, given by medical experts, the supreme court of New Jersey holds, Nov. 9, 1896, in Consolidated Traction Co. v. Lambertson, is admissible, although based in part upon statements made by the suffering or disabled person relating to his past or present symptoms. And when there is physical injury, the court holds that damages resulting from the incidental fright may be recovered.

A Prolific Family.—An authentic case is described in *Memorabilien* for February, of a woman of 40 who had borne children eleven times; three times twins, six times triplets and twice quadruplets, and was again pregnant at the time of writing. It is not a recent case, but dates from 1808, although never recorded before in medical literature. The mother herself was one of a set of quadruplets and her husband had been a twin. Only three of her thirty-two children were still-born.

Right of Blind Person to Travel Alone.—A question on which there seems to be a scarcity of decisions is whether a person otherwise qualified may be rejected as a passenger for the sole reason that he is blind. It was litigated in the case of Zackery v. Mobile and O. R. Co., where the supreme court of Mississippi decided, Feb. 1, 1897, in the blind man's favor, the one in question being admittedly not infirm, but robust, able to take care of himself, and to comply with the rules applying to passengers generally.

The Family Physician.—Bourneville renews an old suggestion that the family physician should have a "family note book" in which he records the medical history of the families in his charge. When it is impossible for him to respond at once to an urgent summons he should have a trusted assistant or have made arrangements with a second physician, who should have access to the books, under the seal of professional secrecy, and attend to the call until his superior is at liberty. In this way the family would not be kept waiting; much more intelligent attendance would be secured than from an outsider, hastily summoned, while the case would remain afterward in his hands.

The Statue of Pasteur.—The *British Medical Journal* announces that subscriptions in France and other countries for a statue of Pasteur now amount to more than $50,000. Paul Dubois has been selected as the sculptor, and the site for the statue will probably be the space between the Rue de Médicis and the Luxembourg Gardens. More than $100,000 has already been spent in the erection of statues of Pasteur in various parts of France. As an instance of the high regard in which he is held outside of that country, it may be mentioned that the municipality of the City of Mexico has given the name of Pasteur to the gardens situated in front of the National School of Medicine in that city. The Rush Monument Committee would be much pleased to record a similar showing in this country for the Rush monument. Those wishing to contribute will please send their contribution to the committee treasurer, Dr. Geo. H. Rohé, Sykesville, Md.

An Antiseptic Diet in Apples.—A practitioner, in *Life and Health*, writes that the *fons et origo* of unsightly complexions is bad digestion, and we generally trace that to a bad liver. One of the best remedies for a sluggish liver is cheap and pleasant. Dieting is the secret of the cure. The best liver regulator for persons of sedentary habits, and those are the ones whose complexions are muddy, is to be found in apples, eaten baked if they are not well digested when eaten raw. "I attended the pupils at a well-known boarding school, and among them was a country girl whose complexion was the envy of all her associates. I found that she was a very light eater at her meals, but she had a peculiar custom of taking a plate of apples to her room at night and eating them slowly as she studied her lessons. This was her regular practice. Some of the other girls in the institution took it up and I know, as a result of my personal investigation, that the apple-eating girls had the best complexions of any in the school."

Muetter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures instituted by the late Prof. Thomas Dent Muetter, M.D., LL.D., on some "Point or Points in Surgical Pathology" will be delivered in the winter of 1899–1900 before the College of Physicians of Philadelphia. The compensation is $600. The appointment is open to the profession at large. Applications stating in full subjects of proposed lectures must be made before October 1, 1897 to Committee on Muetter Museum. John H. Brinton, M.D., Chairman, N.E. Cor. 13th and Locust Street, Philadelphia, Pa.

Privileges allowed Sick Jurors.—Where one of the jurors was taken ill while the trial of a murder case was in progress, so as to necessitate the services of a physician, and on several occasions he was removed for a short space of time from the presence of the other jurors, the supreme court of Missouri holds, State v. Schmidt, Feb. 2, 1897, that this furnished no ground for a reversal of judgment, inasmuch as the juror was always in the charge of a deputy sheriff, who testified that on no occasion did he or any one else converse with the juror about the case.

The Roentgen Ray.—Dr. E. Bock suggests in *Memorabilien* for February that if letters are painted on a sheet of cardboard, afterward varnished and dusted with powdered metal, or the letters are made as gold leaf is applied, the Roentgen ray will throw their shadow through the opaque cornea of the blind, and if the optic nerve is still sound, the blind person will see the shadowgraph thrown on the retina. He urges experts to experiment in this line with persons who have lost their sight from opacity of the cornea, etc., and quotes Professor Eder of Vienna, as authority for its feasibility.

Radiographic Delineation of the Arteries.—Dr. Nathan Raw communicated to the Manchester Pathological Society a method he had adopted of skiagraphing the arteries. He said that when trying to examine a fracture which was enveloped in a thin plaster-of-paris bandage he found it quite opaque to the X rays. The idea then occurred to him that the vessels (arteries) might be reproduced in the skiagraph by injecting them with a somewhat similar substance. Accordingly when the next opportunity occurred he injected (postmortem) a solution of calcium sulphate and carmin into the femoral artery and then took skiagraphs of different parts of the body. He illustrated his remarks by exhibiting several pictures showing the arteries perfectly even to the most minute anastomoses. In fact, so opaque was the substance that the arteries actually showed through the bones. Dr. Raw also showed a large bromid print, 24 x 18 inches, of a child showing all the arteries injected.

New York Infirmary for Women and Children.—A gift of $30,000 was received recently by the treasurer of the New York Infirmary for Women and Children, with the understanding that the name of the donor should be known only to the managers of the institution. The money was to form a part of the $250,000 endowment fund that is being raised for the infirmary. It has lately transpired that the money was given by Mrs.

James Walker, who has hitherto shown her interest and more than once has befriended the infirmary when the expenditures were exceeding the income. This is the second large gift the hospital has received within two weeks. The legacy of Miss Julia Cooper of $25,000.

Vital Statistics of New York State in 1896.—The *Bulletin* of the State Board of Health of New York for December, contains a supplemental report showing that the total number of deaths in 1896 amounted to 120,683, or 1,000 less than in preceding year. Delayed returns from certain districts, which should be taken into the account, estimated at 3,300 deaths, will raise the actual mortality to about 124,000, which makes the death rate for the year 19.00 per 1,000 population; that of 1895 was also 19.00; of 1894, 18.75; of 1893, 19.30; of 1892, 20.78; of 1891, 21.43; and of 1890, 19.65. There was an average daily mortality of 340 against 336 in 1895; 324 in 1894, and 340 in 1893. In the Maritime district there was the highest death rate; 21.50 against 21.20 in 1895; in the Hudson Valley district, 19.00 against 18.70 in 1895; in the other sanitary districts from 13.00 to 16.35, or much the same as in 1895. The largest death rate was in July, 23.35 and the smallest in November, 14.75, as reported in the *Bulletin*; the summer death rate was 21.35; the winter, 19.00; the spring, 17.88; the autumn 15.75. The infant mortality was the same as the average of years past, 34.5 per cent. of the deaths having occurred under the age of 5 years. In the summer months 41.1 per cent.; in the spring and fall, 30.5, and in the winter, 29.6 per cent. of the deaths occurred in early life. The zymotic mortality constituted 16.0 per cent. of the total deaths of the year, and caused 3 deaths per 1,000 population for the year. The percentages during several years past have been about 18.0 of the total deaths. Grippe was epidemic early in the year, and caused about 3,000 deaths. Typhoid fever caused 24.4 deaths per 100,000 of the population, the highest mortality being in the Hudson Valley and Southern Tier districts, 37.5, and in the Maritime district the lowest, 16.6 per 100,000 population. Diphtheria caused 71 deaths per 100,000 population, as compared with 78 in 1895, its highest mortality being in the Maritime district, and lowest in the West Central. Scarlet fever caused the smallest mortality in ten years; measles the highest, having been excessive for two years. Diarrheal diseases caused nearly the average of the past ten years, about 9,000 deaths. Consumption caused the usual yearly mortality of a little over 13,000 deaths, and a little more than 10 per cent. of the total.

Closing Exercises of the Army Medical School.—The third session of the Army Medical School, Washington, D. C., which began Nov. 4, 1896, ended March 12, 1897. The closing exercises were held in the hall of the Library of the Surgeon-General's office. Among the audience were many officers of the army with the ladies of their families, a number of naval medical officers and many of the members of the medical society of the District of Columbia. The president of the Faculty, Colonel Charles H. Alden in his opening remarks expressed his satisfaction at seeing so many of the friends of the school present on the occasion. He considered it needless to make any statement of the purposes of the school as this was now the fourth year of its existence. Its graduates and other medical officers who have received instruction in its laboratories are now scattered among the military posts in all parts of the United States so that its influence has become widely extended. The benefits accruing to the army from the instruction given in this school are appreciated not only by the medical corps but by all army officers. Any interruption to its work would, he considered, be felt as a distinct and serious loss to the service. During the past session the instruction has been conducted on the lines laid down in the orders organizing the school in 1893. The morning hours from 9 to 12 daily have been passed in the Pathological Laboratory, and the afternoon from 1 to 3 in the Chemical Laboratory. From 3 to 4 P.M., each day there has been a lecture on one of the following subjects by the professors of the respective branches. Duties of medical officers, military surgery, military medicine and military hygiene, there being a weekly lecture on each subject. Lectures have also been given on Military Law by Lieut.-Colonel Davis, Deputy Judge Advocate General; on Mental Diseases at the Government Hospital for the Insane; on the Army Medical Library, by Dr. Robert Fletcher, F.R.C.S., and on Parasites in Man, by Professor Stiles of the Department of Agriculture. Practical instruction in Operative Surgery has been given by the Professor of Military Surgery. On Saturday morning practical exercises in Hospital Corps Drill and First Aid have been conducted by the instructor in that branch at Washington Barracks, and in riding by Lieut. Herbert White, 6th Cavalry, at Fort Myer, Virginia. The class which was appointed last fall and which has now completed the full course of instruction is the largest that has been through the Army Medical School. Four other medical officers availed themselves of the laboratory instruction or of such parts of it as was practicable for them to take. Colonel Alden then expressed the gratification of the Faculty at the attention to duty, diligence and interest in the work displayed by the class. He held that the success of an advanced course of instruction does not depend on the teacher alone. The zeal of the student is an important factor. He was pleased to say that the class was not lacking in this regard. Its members went out from the school with the best wishes of the Faculty for their future health, happiness and success, and with the fullest confidence that they would acquit themselves honorably and be a credit to the profession, the corps and the school. Surgeon-General Sternberg then delivered the certificates to the student officers with some well chosen remarks. The names of the officers in order of merit were as follows: Lieutenants F. M. Kemp, C. R. Darnall, W. E. Richards, B. H. Dutcher, L. A. Fuller, G. A. Skinner, M. M. Cloud and L. P. Smith. The Surgeon-General suggested to them that as many advantages had been given to them during their course of study much would be expected from them hereafter. He urged them to continue their laboratory work as practical men, pointing out that the practical men of today are those who make use of the microscope and culture media and not those who claim the title merely to cover up their ignorance of recent advances in medical science and practice.

Dr. Samuel C. Busey, president of the District of Columbia Medical Society, followed with an address to the graduates. Dr. Busey recognized the selection of a physician from civil life to deliver the address on this occasion as giving expression to that comity and fraternal friendship which should exist in the profession. He congratulated student officers on the high standard of qualification they had attained, but reminded them that the chapeau, shoulder straps and sword which signalized their position in the medical corps of the army constituted no part of the equipment of the conscientious physician. He congratulated them that limited specialism has not invaded the medical corps although so common among young graduates in civil life. To this corps he looked with confidence to arrest the progress of decadence of general medicine which at present threatens its subdivision into as many limited and minor specialisms as can find adventurers with brains enough to capture the credulous sick. To enable the young officers to appreciate their high position he called attention to the fact that the laws enacted in forty-eight States and Territories to regulate the practice of medicine and prescribe standards of education which must be attained by every practitioner exempt the members of the medical corps of the government services from their requirements, thus acknowledging that the officers of these services have reached a standard coequal with the highest demands of the most advanced development. The medical staff

of the army offered many lines of special work and study with opportunities for original research and investigation afforded by changes of station and of duties which do not come to the plodding wage-earners among the ranks of the civil practitioners. Among the unsolved problems for study he mentioned specially those relating to the influence of climate, temperature and altitude and to topographic, meteorologic, electric and barometric conditions, to the products and geologic formations of soils and to the interchangeable and intercurrent conditions of such natural phenomena upon life, health and disease in military as well as in civil life. In this connection he made a lengthy reference to the meteorologic work done by army medical officers; to Beaumont's investigations on gastric digestion; to Howard's occlusive dressing in gunshot wounds of the lungs; to Otis' announcement of the practicability of enterorraphy in wounds of the intestines; to Letterman's organization for field ambulance service and to Sternberg's discovery of the micrococcus of pneumonia. Several fruitless fields of research were suggested. Pathogenic germs vary in virulence according to variations in many external influences which remain to be determined. The cause of the exacerbation of pain in maimed limbs and rheumatic joints coincident with the passage of storms is another subject of inquiry. So far we know nothing of the relation of argon to vitality. The life history of the plasmodium malariæ outside of the body is also unknown, as is the causation of mountain fever. Dr. Busey then referred to the Library and Museum of the Surgeon-General's office as signalizing and emphasizing the eminent distinction which the army medical corps has attained in military as in general medicine. He closed his address by urging harmonious coöperation in all the relations of professional life between army medical officers and their civilian brethren as coequals in all that pertains to the esprit de corps which should unite us in the common fellowship of a profession animated by noble aspirations to alleviate suffering, prolong and save life and broaden the scope of our usefulness for the good of mankind.

An inspection of the laboratories of the school closed the exercises and the session; but many of the audience had an opportunity of meeting Dr. Busey and thanking him for his scholarly address in the evening at a reception in the hospitable home of the president of the Faculty.

New York.

THE STATUS OF PHYSICIANS IN THE GREATER NEW YORK CHARTER.—At a recent meeting of the New York Academy of Medicine the following resolutions were adopted:

Resolved, That in the composition of the Board of Health by Greater New York there should be three commissioners appointed by the mayor, two of whom shall be practicing physicians of not less than ten years' standing at the date of their respective appointments.

Resolved, That the third commissioner should be a reputed citizen of Greater New York and thoroughly qualified by education and experience for the duties of his office.

Resolved, That the health officer of the port should be ex-officio member of the board.

Resolved, That the president of the board of police should be ex-officio member of the board.

Resolved, That one of these health commissioners should be designated as president of the board by the mayor in making the appointment.

Resolved, That in the opinion of this committee, it would be advisable to abolish the office of coroner and adopt a system in harmony with that now in vogue in Massachusetts, modified to suit exigencies that exist in Greater New York.

At another meeting in the future further consideration will be given to the matter, more especially to the power of the public functionary generally known as coroner. The duties of the office in question seem to be well enough defined, but the rather primitive politics of the East seem to tend toward putting the wrong men in the wrong places.

THE NEW BUILDING and improved hospital wards of the Home for Aged and Infirm Hebrews, West One Hundred and Sixth Street, was opened for inspection on Sunday, March 21. The home has about two hundred inmates, and as they come to end their days there, the place in its character must of necessity partake of both a hospital and a home.

THE VIABILITY OF THE BUBONIC BACILLUS.—Dr. E. H. Wilson, Chief of the Bureau of Bacteriology in the Health Department of Brooklyn, N. Y., after referring to the experiments of Kitasato and Yarsin, relates that he obtained his bubonic cultures from Xarian of China through Dr. W. F. Arnold, U.S.N. His subjects were guinea pigs, mice and rabbits. The thermal death point according to his claim, which seems to be satisfactorily maintained by abundant experimentation, was to be fixed at 60 degrees C. (or 140 F.). The materials of different absorbent properities which Dr. Wilson used were cover glasses, pieces of filter paper and small bits of wool blanket. The investigations have been most complete and tend to fortify the conclusions: 1. The thermal death point of this organism is one or two points higher than that of the majority of pathogenic bacteria of the non-pyogenic variety. 2. Differing widely from cholera, sunlight and desiccation can not be relied upon to limit the viability of this bacillus under commercial circumstances. 3. Rags, mails, ballast and general merchandise coming from infected ports should be subjected at either the port of departure or the port of entry to a thorough system of disinfection. Experiments in regard to the effects of chemic disinfectants have been made in the laboratory only with carbolic acid. It has been found that an exposure for two hours to a 1 per cent. solution of carbolic acid sufficed to destroy the life of the bacillus. This observation has subsequently been confirmed by Kinyoun.

Cincinnati.

THE ANNUAL REPORT of the Ohio State Board of Medical Registration and Examination has just been submitted to Governor Bushnell and it shows that 6,701 certificates were granted to physicians on the basis of graduation, and 119 applications rejected; 665 certificates were issued to practitioners of ten or more years and 174 of this class rejected. The total receipts were $38,468.06, of which $16,202,92 was expended. After July, 1899, no diplomas will be recognized if issued by colleges requiring less than four years' study and four courses of lectures of at least twenty-six weeks each. The medical colleges of this city which were declared not to be in good standing were the Hygeia Medical College, American Eclectic College, Physio-eclectic College, Curtis Physio-medical College, Medical University of Ohio and the American Health College. The Board recognized 144 colleges in the United States and Canada as in good standing. In Cincinnati and immediate vicinity 756 physicians were registered.

THE UPPER MAUMEE VALLEY MEDICAL ASSOCIATION held its regular semi-annual meeting at Fort Wayne, Ind., March 9. The following are the officers: President, Dr. G. W. McCaskey, Fort Wayne, Ind.; vice-presidents, Drs. C. S. Williams of Columbia City, Ind., and C. B. Reid of Van Wert, Ohio; Secretary, Dr. Kent K. Wheelock of Fort Wayne, Ind.; treasurer, Dr. H. A. Duemling, Fort Wayne, Ind.

A COMPLIMENTARY DINNER is to be given to Dr. P. S. Conner on the evening of March 26 to commemorate the closing of his fiftieth consecutive session of medical teaching. Dr. Robert Carothers of Newport has charge of the arrangements.

DR. FRANCIS DOWLING of this city is preparing for publication a monograph on "The Great Ophthalmic Surgeons of the First Half of the Nineteenth Century." The work will be composed of a series of eight essays, which were prepared by the Doctor about two years ago.

THE OHIO STATE BOARD OF HEALTH has started a systematic and searching investigation as to the value of antitoxin in the treatment of diphtheria. A request has been sent to all physicians throughout the State to furnish the Board with the number of cases of diphtheria seen by them during the year together with the number treated with the antitoxin and the results.

AT THE MEETING OF THE ACADEMY OF MEDICINE March 15, Dr. J. M. Withrow reported the results in thirty-five cases of abdominal sections and Dr. Charles A. L. Reed read a paper on the "Sequelæ of Cholelithiasis." The question was considered in respect of the influence of gallstones in the causation of both local and systemic conditions. Under the former head were considered cancer of the liver and gall tract, sclerosis of the ducts, perforation of the bile passages, multiple abscess of the liver and other conditions; under the latter were considered cholemiæ, anemia, septicemiæ, etc. The article will be published in full in the JOURNAL.

Washington.

DONATION TO THE EMERGENCY HOSPITAL.—Mrs. Senator Harsh has donated an X ray outfit to the Emergency Hospital. It is one of the latest models.

THE GROSS ITEM DISALLOWED IN THE APPROPRIATION BILL.—The appropriation of $500 toward the expenses of unveiling the bronze statue to the memory of the late Samuel D. Gross, in the Smithsonian grounds, was lost by being stricken from the appropriations bill in conference.

NATIONAL MEAT INSPECTION.—The first official order issued by Secretary Wilson, of the Department of Agriculture, concerns the exportation of beef to foreign countries and provides: "That from and after March 15, 1897, all beef offered for transportation to European ports, whether fresh, salted, canned, corned or packed, being the meat of cattle killed after the passage of the act under which this order is made, shall be accompanied by a certificate, issued by an inspector of this department, showing that the cattle from which it was produced were free from disease, and that the meat is sound and wholesome, and in order that it may be determined whether all beef exported to European ports has been so inspected and found to be wholesome, it is further ordered, that the meat of all other species of animals exported to such ports, which for any reason does not bear the inspection stamps of this department, shall be packed in barrels, cases or other packages, which are legibly marked in such manner as to clearly indicate the species of animal from which the meat was produced. Meat which is not so marked, and which is not accompanied by a certificate of inspection, will be classed as uninspected beef, and will not be allowed exportation to European ports." No clearance is to be given to any vessel having on board such meats until the provisions of the order are complied with. Until otherwise ordered, certificates will not be required with beef exported to other than European countries.

PRESIDENT MCKINLEY AT THE EMERGENCY HOSPITAL.—President McKinley called at the Central Dispensary and Emergency Hospital on the 9th instant, to see a personal friend who had been brought there with a fracture of the leg. He was very much pleased with the institution and its usefulness.

SENATOR GALLINGER CRITICISES THE ACTION OF THE CONFERENCE COMMITTEE.—When the Conference Committee made its report to the Senate on the appropriation bills for the District of Columbia, expunging certain amendments which should have been retained, Senator Gallinger said: "Before the question is taken on concurring in the report, I desire simply to emphasize an observation I made the other day concerning the burial ground at the Washington Asylum, the so-called potter's field. I notice that the Senate conferees receded from the amendment which I had inserted in the bill providing for a crematorium. I am not going to argue the question this morning, but I wish to repeat that there is here in the District of Columbia, in the capital of this great nation, a condition of things existing such as I apprehend can not be found in any other great city perhaps in the civilized world, and some remedy ought to be provided at the earliest possible moment, so that this reproach will not be laid at our doors. I regret that the conferees on the part of the Senate surrendered the amendment, especially so without providing at least for the purchase of additional ground for the burial of the indigent and pauper poor in the District of Columbia. There is one other matter concerning which I simply want to make a single observation, and that is the provision I had inserted that any legally licensed physician may attend private patients when they occupy pay rooms in any of the public hospitals in the District of Columbia. I think that this must be the only city in the United States in which public hospitals exist, getting contributions from the public fund, where pay patients are refused the privilege of having their own physicians. I believe there is only one hospital in the District where that condition of things exists. The medical profession have insisted, and very properly have insisted, that these restrictions should be removed and that physicians should be allowed the same privileges here in that respect that they are allowed in the other great cities of the country. I simply desire to say that I regret the conferees on the part of the Senate have felt constrained to surrender that amendment, because it is a very proper one and one that ought to have been kept in the bill; but I take it that the Senate conferees had to surrender something; that this is a compromise measure, and they are very earnestly desirous of reaching a conclusion and agreement. So I find no fault concerning their action, except to say that I feel sure such a provision will in the near future be incorporated in the District of Columbia appropriation bill and that this restriction, which ought not to exist, will be removed." Senator Gallinger is always deeply interested in all medical matters of the District, and has been a true friend to the local profession in the matter of the important medical legislation which has passed Congress during the recent session and become laws.

APPENDICITIS.—The note on differentiation of appendicitis in our last number, page 555, should have been credited to the *Medical Record* of Nov. 21, 1896. The Italian notice did not mention its American origin and the original escaped our attention.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 13 to 19, 1897.

First Lieuts. Champe C. McCulloch, Jr., Frederick P. Reynolds and Madison M. Brewer, Asst. Surgeons, are ordered to report in person to the president of the examining board appointed to meet at Ft. Leavenworth, Kan., for examination for promotion.

Brigadier-General George M. Sternberg, Surgeon-General, and Lieut.-Col. David L. Huntington, Deputy Surgeon-General, are detailed to represent the Medical Department of the Army at the Twelfth International Medical Congress, to be held in Moscow, Russia, August 19 to 26, 1897.

Major Curtis E. Munn, Surgeon (Benicia Bks., Cal.), is granted leave of absence for one month.

Capt. Paul Clendenin, Asst. Surgeon, is transferred from Ft. Warren, Mass., to Key West Bks., Fla., to relieve Capt. Jefferson R. Kean, Asst. Surgeon, who is transferred to Ft. Warren, Mass.

Capt. George McCreery, Asst. Surgeon, ordered to Ft. Warren, Mass., for temporary duty in addition to his present duties.

A board of officers to consist of: Major Henry McElderry, Surgeon; Major John M. Banister, Surgeon; Capt. William F. Lippitt, Jr., Asst. Surgeon, is appointed to meet at Ft. Leavenworth, Kan., on Tuesday, April 13, 1897, at 10 o'clock A.M., for the examination of such officers of the Medical Department as may be ordered before it, to determine their fitness for promotion.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 13, 1897.

Surgeon T. C. Craig, detached from the marine rendezvous, New York, and ordered before retiring board March 16, then home and await orders.

Asst. Surgeon R. G. Brodrick, detached from the "Constellation" March 16 and ordered to the New York navy yard March 17.

James C. Pryor, commissioned as Asst. Surgeon from February 27.

Surgeon H. E. Ames, detached from the "Detroit" and ordered to the "Cincinnati."

Surgeon D. H. Bertolette, detached from the "Minneapolis, ordered home and granted three months' leave.

Surgeon N. H. Drake, detached from the "Cincinnati" and ordered to the "Minneapolis."

Asst. Surgeon G. C. Hubbard, detached from the "Cincinnati" and ordered to the "San Francisco."

Change of Address.

Bullington, Travis A., from Balter and Park Av. to 304 West Chestnut St., Louisville, Ky.

Fuller, Wm., from 4704 State St. to 4701 Calumet Av., Chicago.

Morgan, E. A., from Morow to 402 new Powers Building, Decatur, Ill.

LETTERS RECEIVED.

Alvis, R. H., Ardmore, Ind. Ter.

Barry, T. T., Pope, Tenn.; Beatty, U. K., Pine Ridge Agency, S. D.; Baruch, Simon, New York, N. Y.; Brinkerhoff, W. C., Chicago; Benedict, A. L., Buffalo, N. Y.

Cuppaidge, G. O., Moberly, Mo.; Carpenter, J. G., Stanford, Ky.; Cullen, G. I., Cincinnati, Ohio.

Dewey, C. O., Polo, Mo.; Daniel, J. B., Atlanta, Ga.; Driver, W. E., Norfolk, Va.; De Schweinitz, G. E. Philadelphia, Pa.; Davis, N. S., Jr., Chicago.

Frazier, Mattie, St. Louis, Mo.; Fassett, C. W., St. Louis, Mo.; Foster, G. W. Georgetown, Texas; Fleming, C. K., Denver, Colo.

Gotham Co., The, New York, N. Y.; Grisham, J. W., Blackland, Miss.; Green, Geo. W., Battle Creek, Mich.; Gladson, M. M., Hord, Ill.; Gilcreest, J. E., Gainesville, Texas.

Henderson, Geo. S. (2), Holcomb, Ill.; Hare, H. A., Philadelphia, Pa. Judd, W. H., Janesville, Wis.; Johnson, H. L. E. (2), Washington, D. C. Keen, W. W., Philadelphia, Pa.

Marshall, John, Philadelphia, Pa.; Montgomery, E. E. Philadelphia, Pa.; Morgan, E. A. (2), Decatur, Ill.; Madden, John (2), Milwaukee, Wis.; Mulvane, G. J., Topeka, Kan.; Malster, R. M., Omaha, Neb.; Mulbury, F. S., Brooklyn, N. Y.; McIsaacs, Isabel, Chicago; McCandless, John C., Chicago.

Nordhoff-Jung, Sofie A., Washington, D. C.; Norwich Pharmacal Co., Norwich, N. Y.

Pearse, H. E., Kansas City, Mo.; Priestley, J. T., Des Moines, Iowa; Pacific Electric Co., La Crosse, Wis.; Pressey, A. J., Grand Rapids, Mich.; Parker, W. T., Groveland, Mass.

Reed, C. A. L., Cincinnati, Ohio; Robbins, Charles Pern, Winona, Minn.; Rotter, Chas. F., St. Louis, Mo.

Stueber, F. G. Lima, Ohio; Stoner, Geo. W., Stapleton, N. Y.; Stearns, Frederick & Co., Detroit, Mich.; Smart, Chas. (2), Washington, D. C.; Straus, Leon, St. Louis, Mo.

Van Note, W. B., Lima, Ohio.

Wilson, A. C., Youngstown, Ohio; Wyckoff, R. M., Brooklyn, N. Y.; Wingate, U. O. B. (2), Milwaukee, Wis.; Wilbur, C. T., Kalamazoo, Mich.; Warner, W. R. & Co., Philadelphia, Pa.; Williams, R., Desoto, Ill.; White Rock Mineral Spring Co., Chicago; White, W. R., Providence, R. I.

Zook, E. W., Dunlap, Ill.